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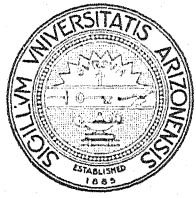

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TWO PUEBLO RUINS IN WEST CENTRAL ARIZONA

By

Edward H. Spicer and Louis P. Caywood

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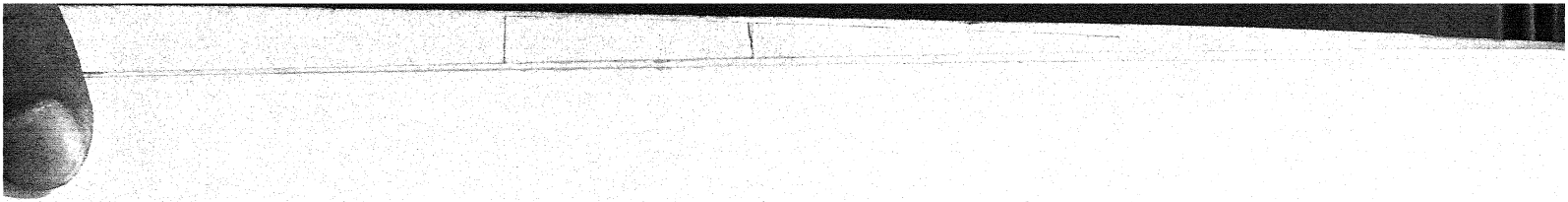

PART I
KING'S RUIN

By Edward H. Spicer

ACKNOWLEDGMENT

The writer is greatly indebted to Dr. Byron Cummings for general advice and for allowing the free use of his field notes and photographs; John H. Provinse, Gordon C. Baldwin, and J. W. Simmons for putting their field notes at his disposal; Louis R. Caywood for the preparation of maps on which figures 2 and 3 are based; Clair A. Hannum for the identification of animal bones; Dr. R. J. Leonard for the identification of some of the rocks; and Dr. Horace Gunthorp for aid in the tentative identification of two genera of shells. The very faithful reproductions of black-on-gray pottery designs are the work of Miss Kate T. Cory of Prescott, Arizona.

INTRODUCTION

The prehistory of west central Arizona is not well known. The reasons for the neglect of this part of the western periphery of the prehistoric pueblo area are not far to seek. The region, which for our present purposes we shall consider to extend from the Jerome Mountains westward to the Colorado River and from an east-west line through Seligman southward to Wickenburg, was not the scene of very impressive prehistoric developments. The striking and beautiful cliff dwellings of the San Juan canyons, the extensive apartment houses of northwestern New Mexico, the massive well-enclosed structures of the Gila drainage have no counterpart in west central Arizona. The surface indications of the ancient civilization of the region are merely small mounds, unpretentious stone-walled forts, or rarely the tumbled stones of a masonry pueblo of ten to fifty rooms.

The beautiful textiles and other perishables that early attracted investigators to caves in some parts of the Southwest have long since vanished in the open villages of west central Arizona.

Even the pottery of the area has served to repel rather than attract the attention of specimen hunters. So long as there was still the exquisite pattern work of the black-on-white and polychrome of the San Juan, the perfect lines and whimsical humor of the black-on-white of the Mimbres, or the gentle tones and occasional exotic designs of the red-on-buff of the Gila for museum shelves, it is entirely understandable that no expeditions should have sought the frankly slapdash and contorted designs of the potters of west central Arizona. The native pottery of the region,[1] Prescott Black-on-gray,[2] stands almost alone in the Southwest for its determined ugliness. It, perhaps more than any other feature of the civilization which produced it, has kept its makers from figuring in the pages of the prehistory of the Southwest.

As southwestern archaeology has turned from specimen hunting and the preservation of the more obvious and striking antiquities to attempts to paint a complete picture of life in the Southwest before 1540, attention has been directed to the tremendous gaps in the groups of facts which are serving as the basis of the picture. These gaps are not all chronological; they are as frequently geographical. Large areas have

[1] To H. S. Gladwin of Gila Pueblo we are indebted for the first description of this pottery type. He has briefly described it as follows: "Verde Black-on-white; a variety [of pottery] which is, more accurately, a dull black-on-gray; the ware is thick and crude, of a coarse sandy paste. Designs are simple, chiefly linear, wide and sloppy, drops and splashes often included. Vessel shapes are ollas and deep bowls, decorated in many repetitions of one motif." ("The Western Range of the Red-on-buff Culture," *The Medallion*, Globe, Arizona, 1930.) In a subsequent publication he designates it as "Verde Black-on-gray," a closer examination having convinced him that it was not properly considered a variety of black-on-white. ("An Archaeological Survey of Verde Valley," *The Medallion*, Globe, Arizona, 1930.)

[2] In conformity with usage at the University of Arizona, the name "Prescott Black-on-gray" will be used in this publication to refer to the above described pottery type.

not been fitted into the picture because there was a complete lack of data in regard to them. The San Juan area has stood as the meter stick by which ancient pueblo progress was measured, mainly because it alone has been known in sufficient detail for a clear understanding of the succession of events. Only recently the San Francisco Mountain region, the Rio Grande drainage, and the Hohokam area of southern Arizona have come in for detailed investigation. Other regions still remain practically uninvestigated. The Verde Valley and the adjoining large section of central Arizona are still question marks in the archaeologists' notebook.[3] Western Arizona, until very recently, has been as mysterious a region as the Verde Valley.

West central Arizona was, however, as early as 1905-6, the scene of a very hasty survey by Dr. J. W. Fewkes of the Bureau of American Ethnology. Dr. Fewkes investigated house types along the upper Verde River north of Montezuma Castle, in the vicinity of Prescott, and along Walnut Creek, a western tributary of Chino Creek. Dr. Fewkes's survey served to define certain architectural features[4] but did not deal with any other aspects of the archaeology, except for a single indefinite mention of pottery on Walnut Creek.

From 1906 until 1930 the region remained untouched by any but pothunters. In 1930 Harold Gladwin of Gila Pueblo conducted two surveys of pottery distribution[5] which served to define Prescott Black-on-gray and to indicate roughly its distribution. While these surveys are sorely in need of supplemental work to the south, west, and north, they will be taken here as the basis of a statement of the range of Prescott Black-on-gray.

Mr. Gladwin, in his surveys of southwestern Arizona and the Verde Valley, found thirty-nine sites in which Prescott Black-on-gray occurred. It constituted from 10 to 100 per cent of the decorated wares found at these sites. Fourteen of them were evidently pure black-on-gray; nine others were

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[3] For what has been done on the Verde see:
Mindeleff, 1896. Fewkes, 1898, 1907. Morris, 1928.

[4] Fewkes, 1907.

[5] Gladwin, 1930, (a), (b).

predominantly so, showing 50 per cent or more of black-on-gray. The location of the sites is indicated approximately on the map (Fig. 1).

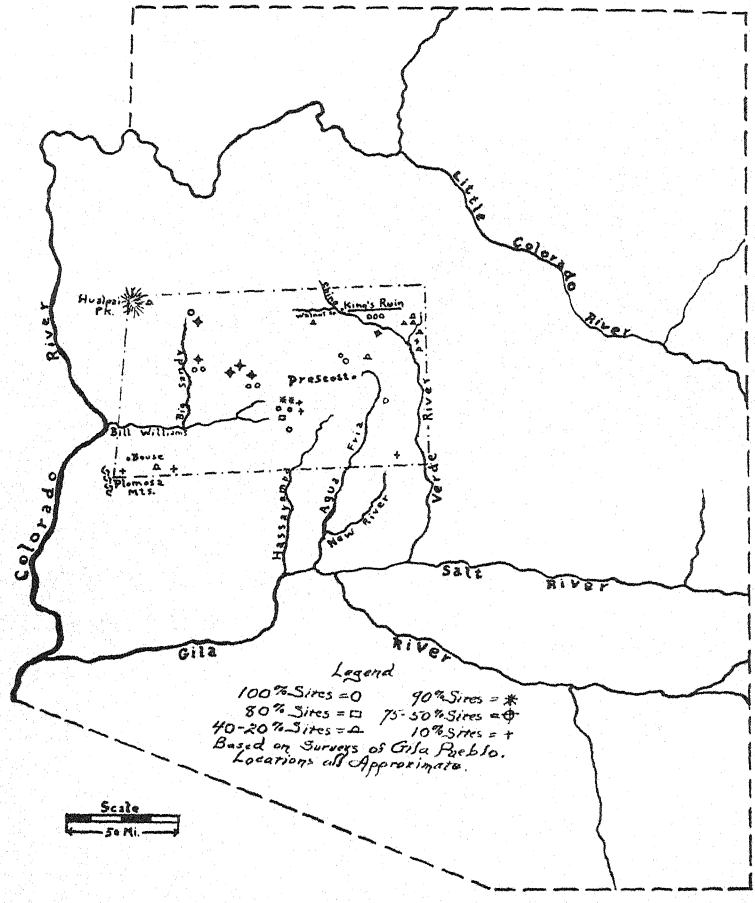

Figure 1.—Sketch map of Arizona showing tentative boundaries of the distribution of Prescott Black-on-gray pottery type.

It may be seen that Prescott Black-on-gray occurs within a region that we may roughly bound as follows: on the northeast by the headwaters of Oak Creek, on the southeast by the headwaters of New River, on the southwest by the Plo-

mosa Mountains, and on the northwest by the Hualpai Mountains.[6] This statement of the range of the ware should certainly not be taken as final. But the distribution of the sites containing the high percentages of black-on-gray seems to give us an indication of the center of the culture of which it is characteristic.

The region in which black-on-gray is now known to occur, as indicated on the map, includes parts of the drainages of the Verde, Agua Fria, Hassayampa, and Bill Williams rivers. Pure black-on-gray sites occur in the Chino and Williamson valleys and up Granite Creek to Prescott, all in the Verde drainage. In Lonesome Valley and as far south as Wolf Creek in the Agua Fria drainage there are black-on-gray sites. There are also sites south of Prescott on Wolf, Groom, and Copper creeks, all tributaries of the Hassayampa. In Skull Valley and along the Big Sandy, in the Bill Williams drainage, there are black-on-gray sites.

The typical sites seem to be mainly west and northwest of Prescott. From lower Skull Valley to Seligman black-on-gray is the native pottery type. As we come eastward into the Agua Fria drainage, there is a mingling with the plain-ware complex of the Verde and the lower Agua Fria. When we reach the Verde Valley itself, black-on-gray is always in combination with black-on-white and black-on-yellow, and the typical Verde plain wares. To the south, west, and north little can yet be said as to the dying out or mingling of black-on-gray with other pottery types.

A statement of the surface occurrence of a pottery type at various sites can give us valuable information as to the range of the culture which produced it, but it is likely to be misleading in regard to the chronological and other relations of the culture. Such a statement becomes informing in an important way only after it is interpreted in the light of thorough excavation of some typical site. An attempt to clarify the place in southwestern prehistory, of the people who produced Prescott Black-on-gray was made in the sum-

[6] Occasional pieces of black-on-gray are also reported from the vicinity of San Francisco Peaks by Hargrave, and occasional pieces have been found as far south as the Gila Valley (Gladwin, *An Archaeological Survey of Verde Valley*).

mer of 1932. An expedition sponsored by the Arizona State Museum and the Yavapai County Chamber of Commerce, under the direction of Dr. Byron Cummings, excavated a site in the Big Chino Valley. The principal decorated pottery encountered was Prescott Black-on-gray. In the following paper the results of this excavation will be described.

EXCAVATIONS AT KING'S RUIN

The site selected for the investigation of the culture that produced Prescott Black-on-gray lies well within the limits of the area over which the pottery type occurs. It was chosen at the suggestion of J. W. Simmons of Prescott. The site is on the property of the King brothers and is known as King's Ruin. Situated on the east bank of Chino Creek about 1½ miles below the mouth of Walnut Creek, it is approximately 35 miles northwest of Prescott. It is the largest of a group of four small ruins scattered within a distance of a mile along the east and west banks of Chino Creek.

An intermittent stream, Chino Creek is the longest western branch of the Verde River. It flows in a southeasterly direction through a broad valley, entering the Verde about 10 miles southeast of King's Ruin. From the eastern side of the valley rises Black Mesa, at the southern edge of the plateau country of northern Arizona. It attains an altitude of over 6,000 feet and supports a heavy growth of pine and juniper. Lower mountains of granite and recent extrusive igneous rocks, deeply cut by streams, such as Walnut and Pine creeks, tributaries of the Chino, form the western boundary of the valley.

King's Ruin is situated on the western edge of a broad terrace composed of coarse unconsolidated gravels and fine alluvial material which borders the present flood plain of Chino Creek. The terraces and flood plain of the Chino Valley, with their covering of fairly abundant grass, at present support considerable herds of cattle as well as many antelope. Within recent years agriculture has been carried on with some success, by means of irrigation, on parts of the terraces in the immediate vicinity of King's Ruin.

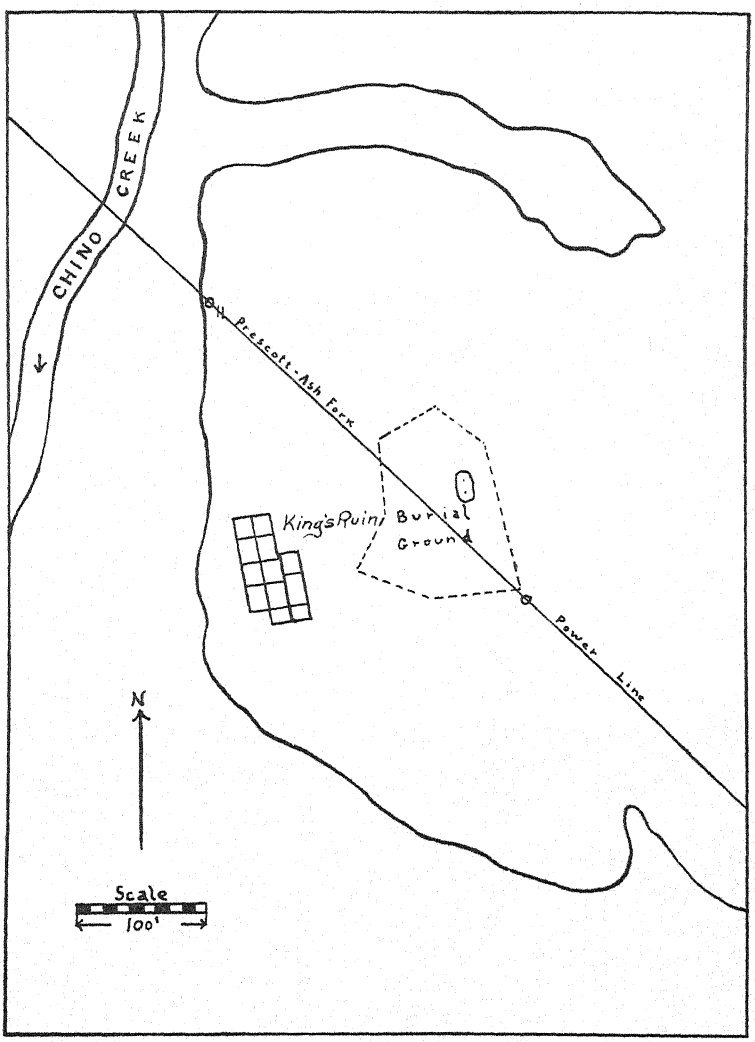

Figure 2.—Map showing the location of King's Ruin.

During the past the region has supported a population larger than that now inhabiting it, as indicated by the four prehistoric sites of which King's Ruin is one, other similar sites farther down the Chino near its junction with the Verde,

and the considerable number of sites along the whole length of Walnut Creek, visited and described by Dr. Fewkes.[7] This population could have been supported only if the water supply in Chino Creek and its tributaries were greater than it is at present.

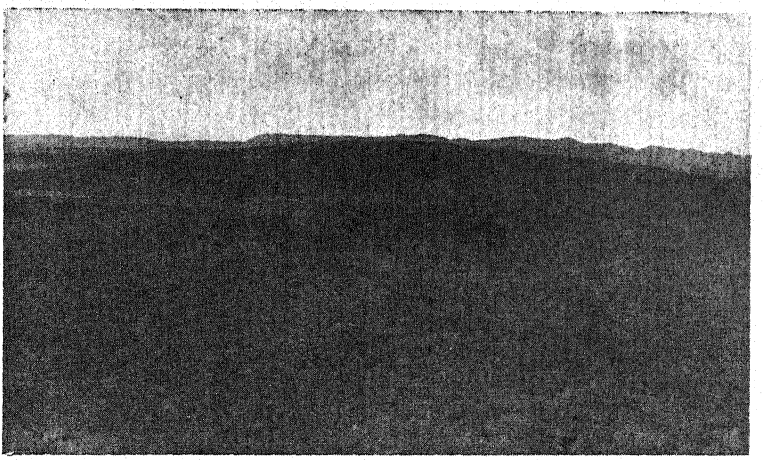

Plate I.—King's Ruin before excavation.

King's Ruin, before excavation, presented the appearance of a small mound directly overlooking the channel of Chino Creek. When the State Museum expedition began work, no house structures had been disclosed. J. W. Simmons, working under the auspices of the Arizona State Museum and the Yavapai County Chamber of Commerce, had uncovered some burials in the flat ground about 150 feet to the east of the mound. Efforts were concentrated on the mound, which was eventually completely excavated and found to be the remains of a compact pueblo of twelve rooms. Work was continued on the burial ground by Mr. Simmons and the museum workers. Fifty-five burials were finally uncovered, and in addition the floor of an oval dwelling was found in the burial ground. No stratified rubbish heap came to light, but excavations below the floor level of the compact pueblo

[7] Fewkes, 1907.

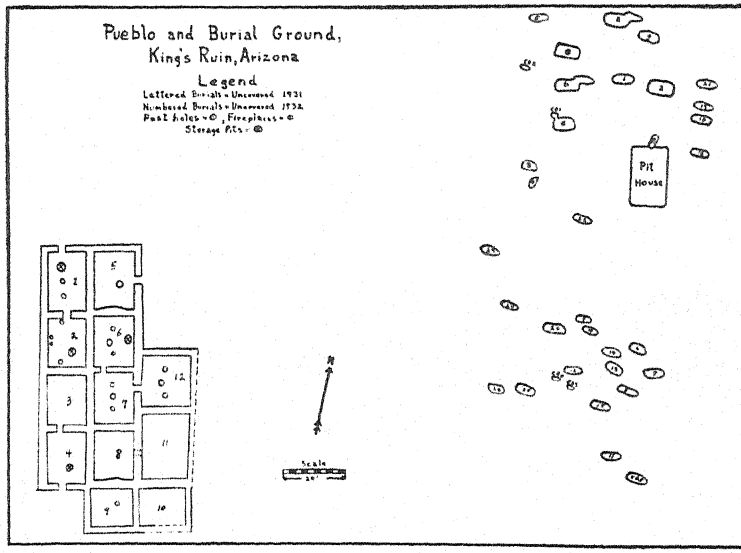

Figure 3.—Pueblo and burial ground, King's Ruin.

revealed the floor of an oval structure similar to the one encountered in the burial ground. This constitutes the only definitely stratified data disclosed in the excavation.

CHRONOLOGY

The period during which at least a portion of the pueblo at King's Ruin was built has been tentatively determined by the Douglass Method of Tree-Ring Dating. This period, as provisionally worked out,[8] extends from about A. D. 1026 to 1048. The tentative character of the dates results from the facts that the charcoal specimens from the pueblo consist of piñon, that the datable material is limited in amount, that the ring series are short, and that this dating is not yet corroborated by any other tree-ring work in the immediate region. In spite of the doubt, it is worth while placing these dates on record because they will help the dating of other

[8] The dates for the King's Ruin material were worked out by Gordon C. Baldwin, under the direction of Dr. A. E. Douglass of the University of Arizona. They have not yet been published.

ruins in the region in which beam specimens may be found. Moreover, the dates fit in well with the archaeological evidence.

Intrusive pottery types from northern Arizona were found in the excavation. The most abundant of these was Flagstaff Black-on-white which was in use in the San Francisco Mountain region during the period A. D. 1050 to 1200.[9] Its abundance, relative to earlier and later intrusive types, seems to be consistent with the dates which place the building of the pueblo at a time just prior to the making of the pottery type. The latest intrusive pottery found at the site was Kayenta Polychrome, which was not made before 1200. Its occurrence fixes a minimum time for the abandonment of the pueblo. If we accept the tree-ring dates we can make the tentative statement that the pueblo was occupied from about 1026 to at least 1200.

If we do not accept the tree-ring dates, we are faced not with a complete lack of information concerning the earliest occupation of the site but merely with a lack of definiteness as to the time at which the above-ground masonry pueblo was built. There were people living in pit houses at King's Ruin for some time previous to the building of the pueblo. This earlier period probably reaches back to the ninth century A. D. This statement is based on the finding of Kana-a Black-on-white sherds in the refuse accumulations at the site. Kana-a Black-on-white has been assigned to a time period antedating A. D. 850 in the San Francisco Mountain region.

The remains of dwellings of the early period were encountered at three different points during the excavation and constitute very definite evidence of an earlier occupation.

The first indication of the earlier structures appeared when excavation was carried on below the floors of the two north rooms of the pueblo. Eighteen inches below the floor of Room 5 another floor of hard-packed earth was found. Ex-

[9] The pottery types (with their time ranges) referred to in this section are those described by L. L. Hargrave, "Guide to Forty Pottery Types from the Hopi Country and the San Francisco Mountains, Arizona"; *Museum of Northern Arizona Bulletin* 1, Flagstaff, 1932, pp. 15, 16, 22, and Plate VIII.

cavation was carried only to the point of revealing the south and parts of the east and west sides of the floor. The west edge extended beneath the north wall of Room 1 (Fig. 4).

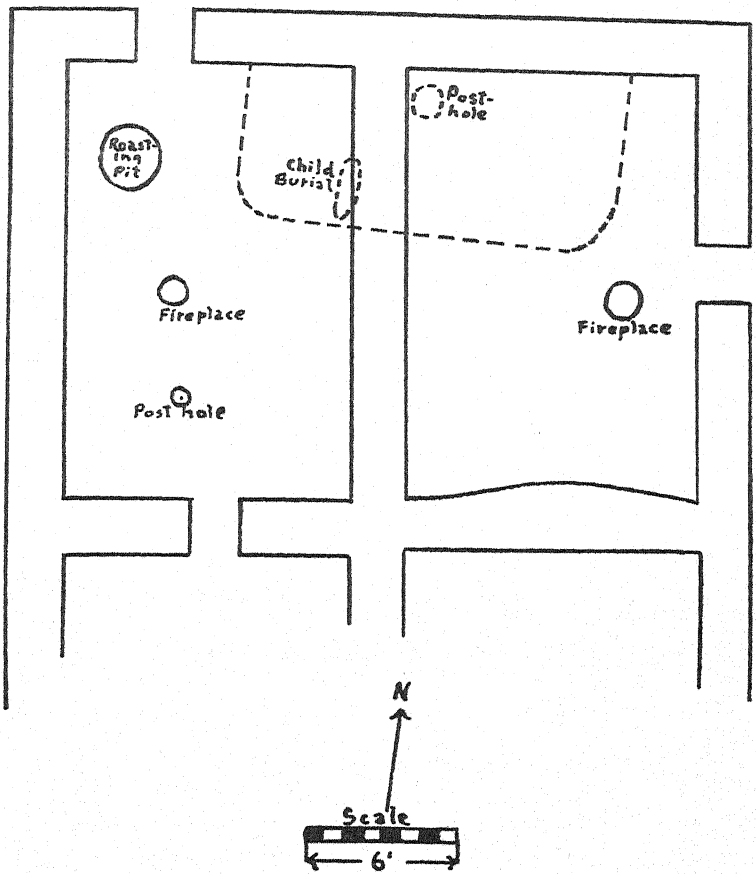

Figure 4.—Rooms 1 and 5 of the pueblo showing underlying floor. Broken lines indicate early floor and associated features.

The south side extended under the wall dividing rooms 1 and 5. The floor was roughly oval in shape and contained a large posthole about 6 feet from the west edge and the same distance from the south edge. The importance of this

discovery lies in its stratigraphical evidence of an occupation of King's Ruin prior to the building of the compact pueblo.

An oval floor was later found 18 inches beneath the surface in the burial ground. It has been assumed to belong to the same period of occupation represented by the floor under the pueblo. The assumption is based on the following considerations. There is an obvious similarity in form between the two floors: both were oval and both contained large post-holes in about the same relative positions. The floor in the burial ground had been covered by an 18-inch accumulation of soil and debris. A burial had been let down through the north end of the floor, indicating that it had been abandoned sometime previous to the use of the area as a cemetery.[10] Thus, while the stratigraphic position of the floor in the burial ground is not established with the exactness of the one beneath the pueblo, it is evident that it was not in use during the later phases of occupation of the site. This fact, together with the similarity in form between the two floors, justifies us in considering them as representing a distinct early phase of culture at King's Ruin preceding that represented by the compact pueblo.

Unfortunately, the soil overlying the floor in the burial ground had been disturbed, so that with one exception none of the artifacts found above the floor can be considered as surely associated with it.

REMAINS OF THE EARLY PERIOD

The type of house in use during the early period at King's Ruin was technically a pit house, since its floor level was a few inches below the surface of the ground. Almost all our knowledge concerning the early habitations is derived from the remains of the house in the burial ground (Plate II). Its floor consisted of hard-packed earth and was outlined by a clay rim about 5 inches high. It was roughly oval in outline, with two straight sides and broadly rounded ends, the longer sides extending in an approximate north-south di-

[10] In addition, the badly disintegrated remains of a floor of somewhat similar type were found in the southern part of the burial ground, and several later burials had been intruded through it (Fig. 3).

Plate II.—Early period floor in burial ground. On the left is the clay lip with the charred butts of the side poles in place. In the left foreground and on the right are the notched stone slabs.

rection. The greatest length of the floor was 27 feet (Fig. 5). Each of the two longer sides was 21 feet; the maximum width was 17 feet.

Set in about 8 feet from each end were the remains of two large juniper posts which had supported the roof. Around the edges of the hard clay lip were the charred ends of smaller posts, 6 and 7 inches in diameter. These averaged about 10 inches apart, were placed about the whole extent of the lip, and rested at an angle of about 45 degrees with the floor.

The superstructure had consisted of the two large interior posts, which were probably crotched (Fig. 6), and on which had been set a ridgepole. Against the ridgepole had been leaned the smaller posts; the angle at which the majority of these leaned indicated a height of about 7½ feet for the ridgepole.

Beyond this we have no evidence as to the nature of the superstructure. Roof material was not preserved in any form, but we may suppose that it consisted of small sticks, brush, and earth. No evidence as to the nature of the entrance came to light. Entrance could have been made easily between two of the more widely spaced leaning posts. No indication of a fireplace was found in the floor.

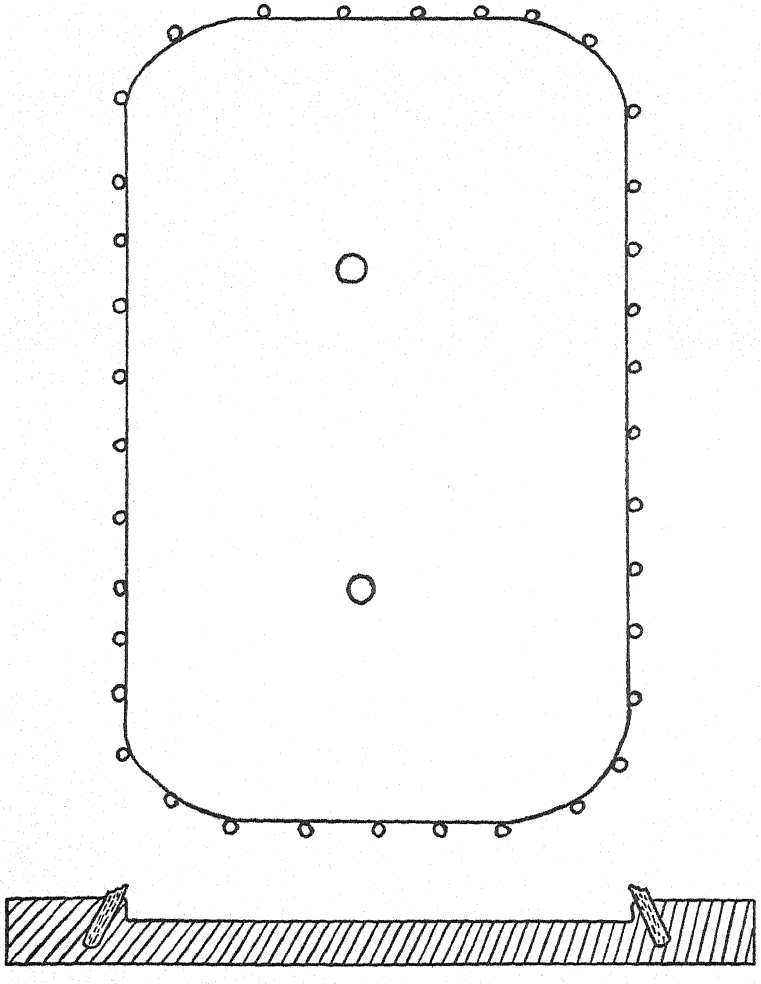

Figure 5.—Ground plan and cross section of an early pueblo dwelling.

Three stone slabs, 2 feet by 1 foot, notched at one end, were found lying on the floor of the structure. There was no evidence that they had been imbedded in the floor, nor was there any indication of any sort of structure in the support of which they might have been involved.

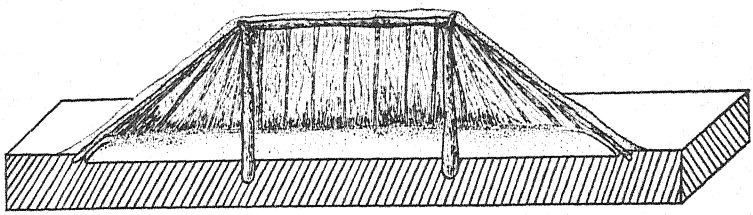

Figure 6.—Conjectural reconstruction of an early pueblo dwelling, King's Ruin.

The house had been destroyed by fire, all the side and interior posts being charred where they had been preserved at all. The fragments of a small stone ax, which had been split into pieces by heat, were found on the floor in association with charred wood and other fragments of heat-cracked stone. In view of its obvious subjection to great heat, it is probable that the ax had been lying on the floor of the house at the the time the structure burned. The ax had a full-round groove. A stone maul, also with full-round groove, was found at another place on the floor of the structure.

None of the other stone tools nor the pottery found in the fill overlying the floor can be surely regarded as having been used during the period of habitation of the oval house. However, if for the reason mentioned above, the ax is regarded as an early tool, then it is probable that the maul is also of this period, for none of the stone axes or mauls found in association with the later pueblo have the full-round groove; all are three-quarters groove. Perhaps we may therefore regard these two full-round-groove, stone tools as early-period implements.

Our only other source of information in regard to the early period of King's Ruin consists of a child burial which had been made beneath the floor of the oval structure underlying rooms 1 and 5 of the pueblo. The burial lay 6 inches below the floor of the older structure, 24 inches below the floor of Room 1 of the pueblo. The skeleton was oriented north and south, with head to the north, was unflexed and lay on its back. The floor of the older structure had been hard-packed above it. At the feet of the child lay a small bowl, bottom up. This bowl constitutes our only piece of

early pottery that is definitely placed stratigraphically. In view of that fact we shall described it completely.

The bowl is slightly more than hemispherical in shape, with a 6-inch orifice and a depth of 3½ inches. The bottom is rounded, and the walls round gradually into the curve of a hemisphere. The rim is straight with rounded edge. The walls are thick, ⅜ inch. The paste is very coarse, showing much mica and relatively large angular pieces of quartz and feldspar. The color of the paste is dark gray, and in places has fired to a reddish-brown. The walls are irregular in thickness and show irregular depressions and ridges, indicating a crude process of vessel molding. The surface has been slightly smoothed but not polished. No slip has been applied.

Decoration was applied to the dark gray of the surface in what appears once to have been a dull black. The present color is a faded rusty red, with occasional patches of a gray-black showing at the edges of lines. The design consists of a broad line encircling the interior just below the rim, from which are pendant ten solid-color triangles (Fig. 7). Two inches below the upper line is another broad line encircling the whole interior, and from this line are five pendant solid-color triangles. The effect of this latter band of decoration is that it leaves a bare center which is roughly a five-pointed star. It is clear, however, that the potter had no such figure in mind when she was executing the design, for one of the points of the star is square, indicating that the purpose was merely to affix the triangles to the broad line without regard for the symmetry of the undecorated area in the bottom of the bowl. The brushwork was very poorly done, and in several instances the paint had been allowed to run from the tips of the triangles down the walls of the vessel.

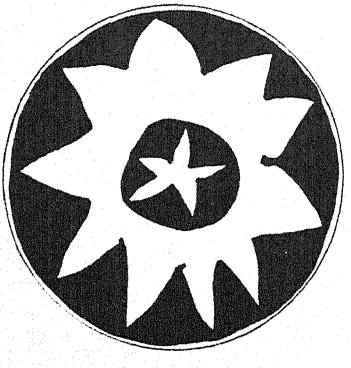

Figure 7.—Design on early black-on-gray bowl.

The significance of the bowl lies in the fact that it illustrates a continuity in the arts of the people who inhabited the pit houses of the early period and those who lived in the later compact pueblo. It seems that we can safely regard this piece of pottery as a prototype of the black-on-gray pottery that is the dominant decorated ware during the Late Pueblo Period at King's Ruin. Moreover, as we shall see when the later ware is described, there is very little advance in the late period over the earlier in pottery manufacture or decoration. The characteristics we see in this early bowl are a feature of the majority of the pottery manufactured in the later period. Coarse paste and coarse temper, unpolished surfaces, deep bowl shape, gray paste and dull black paint, crudely executed and simple but consistently unsymmetric designs persist through the whole occupation of King's Ruin.

In the ashes on the floor of the oval dwelling under Room 5 of the pueblo were found several black-on-white sherds with decoration in broad, black lines.[11] These sherds are of a type of pottery that is found associated with ruins of the early part of the Late Pueblo Period in the region of Flagstaff and in the vicinity of Kayenta. They indicate, therefore, that the pit houses of King's Ruin were contemporaneous with those developments in the north. They also indicate that the people of the pit houses were in touch with and were maintaining trade relations with the makers of black-on-white. Pottery similar in type to these sherds is found in ruins east of the Chino in the Verde drainage, and it was probably the people of this region with whom the people of King's Ruin were in closest contact during the early period.

In summing up the early period at King's Ruin, all we can say as yet is that the people lived in oval houses excavated a few inches below the ground level, with heavy hip-roof superstructures. These houses were scattered in groups of two or more. Pottery of a crude type decorated in black-on-gray was manufactured. Children were sometimes buried beneath the floors of houses, and offerings of pottery were placed with the dead. Stone tools with a full-round groove were

[11] Deadman's Black-on-white. Cf. Hargrave, 1932.

used. Future excavation will have to define more exactly the nature of these early developments in the black-on-gray culture.

REMAINS OF THE LATE PERIOD

The late period at King's Ruin is represented by an abundance of remains. The compact pueblo with all of the material found in its rooms constitutes the major source of information. In addition, all of the burials to the east of the pueblo, as well as a few outside the western wall, seem to have been made during the Late Pueblo Period. From these abundant evidences it is possible to reconstruct rather fully the material culture of the later period.

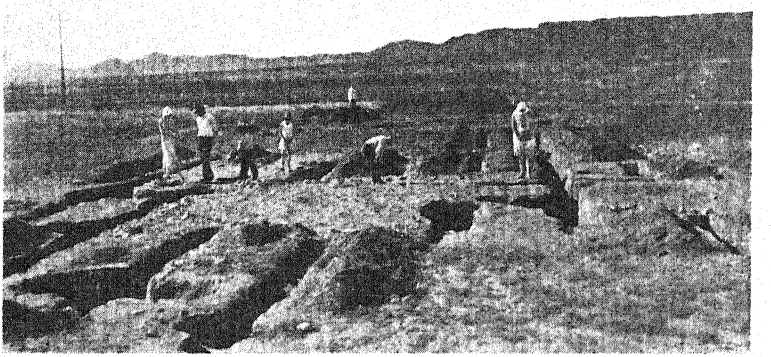

Plate III.—King's Ruin after excavation showing the pueblo structure.

ARCHITECTURE

The construction of the pueblo was in general massive and substantial. The walls averaged about 2 feet in thickness. The masonry involved both stone and adobe clay. The core of the walls consisted of rounded river boulders, such as occur at present in the bed of Chino Creek. The stones were not worked at all, without exception occurring in the walls exactly in the form in which they were picked up from the creek bottom. They varied in size, some being as large as 2 feet, others as small as 6 inches in diameter. There was

no regularity in their arrangement; they were piled haphazardly together and would not have stood long without the binding and support of the masses of clay in which they were laid. The exteriors of the walls originally presented to view only a clay-covered surface, but the clay has in many places disintegrated and fallen away, exposing the inner core of river boulders. The coating of clay over the boulders was thicker on the interior surfaces, attaining in some cases a thickness of 6 inches. The interior surfaces were well smoothed, and in some places traces of plaster in very thin coats, and apparently consisting of the same material as the clay of the main body on the wall, were visible.

In general plan the pueblo is well laid out (Fig. 3), and indications are that at least eight of the rooms were built at the same time. The three long walls extend in a direction about 10 degrees west of north. These with their cross walls enclose eight rooms. At the southeast corner four additional rooms were built, two on the east side and two on the south. Of the eight rooms making up the two long rows, each of the four on one side corresponds in position with each of the four on the other side. The walls of the two rooms on the east side do not correspond with the walls of the rooms in the long rows. These rooms probably indicate later additions. If that is true, then Room 10 at the southeast corner of the pueblo also indicates a period of later building.

The greatest length of the pueblo, from the northeast corner of Room 5 to the southeast corner of Room 9, is 90 feet. The greatest width of the structure is 47 feet. The individual rooms present various dimensions, but all are rather large as compared with rooms in other pueblos in the Southwest. Room 2 is representative of the size of the rooms. Its dimensions are 16 feet from the north to the south walls, and 12 feet from east to west on the north wall. Rooms 1 and 5 are somewhat longer, and rooms 9 and 10 are somewhat shorter; but all the rooms except Room 11 approach Room 2 in dimensions.

The lengths of the corresponding walls on the sides of rooms are usually very nearly equal, the difference in length being rarely more than 3 inches. In Room 12, however,

there is a difference of 10 inches in the length of the east and west walls. The walls of Room 4, on the other hand, square up almost perfectly, the east and west walls and the north and south walls being of equal length.

Room 11 is 21 feet long and 14 feet wide. The great length of this room as compared with the others in the pueblo suggests that it was set aside as a room for ceremonies or council meetings. But no other evidence of such use came to light. Not even any postholes or a fireplace were found in its floor. This, however, is no proof that there were no such features. The badly disintegrated floor renders the possibility of overlooking postholes and similar features very great, if, indeed, they too were not already obliterated along with the floor.

All of the rooms on the west side have access to the outside by means of entrances in the side walls, rooms 1 and 4 directly, and rooms 2 and 3 indirectly, by means of doorways into rooms 1 and 4, respectively. Room 5 also had direct access to the outside through a doorway in the east wall. Excavation revealed no entrances to the outside from any of the other rooms. The south wall of Room 10, however, had been weathered almost to floor level in most places, and the presence or absence of a doorway could not be readily determined; rooms 6, 7, 8, 9, 11, and 12 showed no evidence of having had doorways to the outside. If one looks at the diagram of the pueblo, he will see that rooms 7 and 8 have doorways leading into rooms 12 and 11, respectively; Room 6 has a doorway leading into Room 7. If rooms 11 and 12 were later additions and the original pueblo comprised only eight rooms, then all of the original rooms had either direct or indirect access to the outside by means of doorways in the side walls. The later additions, rooms 11, 12, 9, and 10, must have made use of entrances through the top, and their addition to the pueblo necessitated making entrances also to rooms 6, 7, and 8 through the roof or the floors of the rooms above.

Doorways varied in width from 2 feet 1 inch in the east wall of Room 5 to 3 feet 3 inches in the north wall of Room 1. All of the entrances except the one between rooms 6 and 7 were at least as high as the present height of the walls,

which varies from 3 feet in the north wall of Room 1 to 5 feet 6 inches in the east wall of Room 7. The entrance between rooms 6 and 7 presented a contrast to all the others (Plate IV). It was only 3 feet high, the solid wall being still intact for 2 feet 6 inches above it.

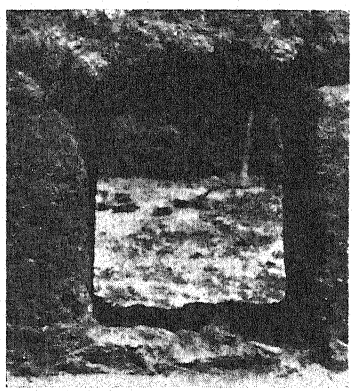

Plate IV.—Doorway between rooms 6 and 7.

The doorway in the east wall of Room 5 was provided with a pair of steps on the interior. The steps were the width of the entrance, 2 feet 1 inch. The first step was 10 inches above the floor of the room, and the second rose to the sill of the entrance, 13 inches above the floor. All of the entrances except the low one between rooms 6 and 7 had sills which varied in height above the floor from 6½ inches in Room 2 to 13 inches in Room 5. Between rooms 8 and 11, the doorway had been sealed with rocks and clay during the occupation of the pueblo, thus making the only access to Room 11 through the roof above.

There is strong evidence that the pueblo was two stories in height, at least over some of the rooms. The massiveness of the walls indicated this, but more conclusive was the great amount of river boulders removed in the excavation, the latter indicating material sufficient to have constructed a second story over at least some of the rooms. The dividing wall between rooms 9 and 10 is a great deal thinner than any of the other walls. This may be an indication that the pueblo did not rise two stories in height over these rooms.

Abundant evidence as to the nature of the roofs or floors of the second-story rooms was found in Room 6 (Plate V). The room had been destroyed by a fire which had been smothered, resulting in the preservation of the supporting posts and material of the roof in the form of charcoal. In the room were found the charred remains of two posts still em-

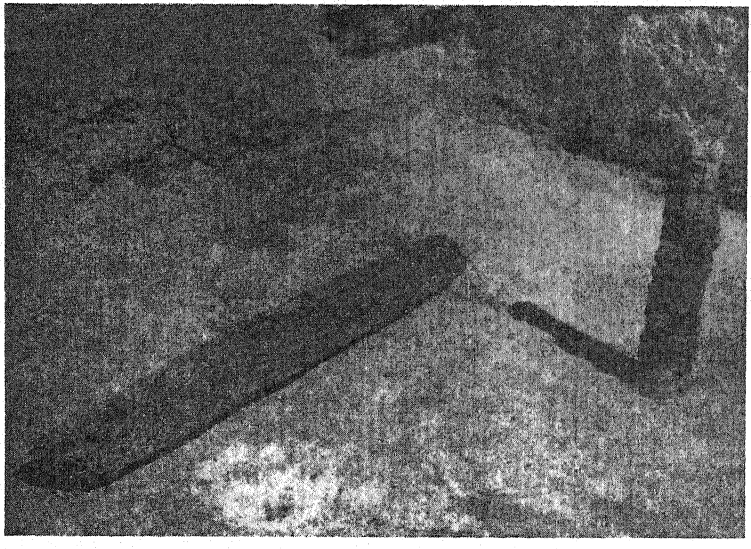

Plate V.—Charred ridgepole and support post, Room 6.

bedded in their original position in the floor. The north post was 6 inches in diameter and was set in the floor 6 feet from the east wall of the room and 4 feet from the north wall. The south post was 5¼ inches in diameter and was 6 feet from the east wall and 4 feet from the south wall. These posts had supported a piñon ridgepole 7 inches in diameter, 6 feet of which was found in the debris of the room, lying in approximately its original north-south position. From the east and west walls of the room to the ridgepole had been laid smaller poles of juniper and piñon, varying from 1½ to 2½ inches in diameter. Over these in turn had been laid split strips of juniper, averaging about 1½ inches in width. Over the strips had been laid a thick mass of juniper bark and finally on top of the bark there had been clay, forming a layer as thick as 4 inches in some places. Many pieces of the latter were found in the debris of the room, baked very hard in some cases as a result of the fire and often preserving the form of the strips and bark over which they had originally been laid. That this upper floor had been in use as the

scene of domestic work was indicated by the finding of the broken pieces of two heavy metates in the debris about eighteen inches above the floor of the lower room. The metates had evidently been on the floor above and had fallen into the lower room with the collapse of the floor.

The only rooms which presented any uniformity in ground plan were rooms 6, 7, and 12. All of these had postholes or posts and a fireplace in about the same relative positions. The postholes were placed approximately like those described in Room 6. About midway between these and a little to the west of a line connecting them was a shallow clay-lined fireplace, circular in form and about 18 inches in diameter. Floors in all the rooms were of hard-packed earth. In the other rooms, as indeed also in Room 6 (where the postholes might not have been found had it not been for the presence of the posts themselves), the floors were badly disintegrated. Undoubtedly many of the original postholes were not found. Those discovered are indicated on the diagram of the pueblo. Rooms 2, 6, 7, and 12 are perhaps the only rooms of whose floor plan we have a fairly complete idea.

In the floor of Room 1 a roasting pit was found in front of the entrance in the north wall. It was 2 feet 10 inches in greatest diameter and 2 feet deep. It was lined with broken pieces of rock and contained many small stones which had cracked and broken because of the great heat to which they had been subjected.

A characteristic feature of the rooms was the presence in four of them of deep pits which showed no signs of having been subjected to heat. A typical one of these occurred in Room 6. The pit in this room was beside the east wall, was oval in shape, and was 4 feet in greatest diameter and 4 feet deep. It had not been lined with rock or clay. A similar pit was found in Room 1 and somewhat smaller ones in rooms 2 and 4. Storage seems to be the only purpose which such pits could have served.

No definite evidence of any ceremonial room either inside or outside the confines of the pueblo was found during excavation.

The excavation of Room 6, besides disclosing more completely than in any other room the nature of the construction of the pueblo, also yielded data of a more historical kind. Between the layer of charcoal and burned clay (the remains of the roof of the room) and its floor was an accumulation of fine silt. The thickness of the layer was as great as 1 inch in some places. It seems probable that this accumulation indicates that the fire in the pueblo was not the cause of its abandonment. Evidently the silt had accumulated before the roof fell in. It could not very well have accumulated had the room been occupied. It must therefore indicate that there was a period of time between the abandonment of the pueblo and the fire which destroyed it. The silt is probably an accumulation of wind-blown material and crumblings that sifted through from the clay on the floor above.

In general, it may be said that the people of King's Ruin were fair architects and good builders. They evidently planned the greater part of their pueblo as a unit and built most of it at the same time. Walls were well made and met nearly at right angles. Rooms were provided with side doorways in most cases and several of the rooms had intercommunication by means of doorways. The use of roof entrances seems to have been a later development, instituted as the size of the pueblo was increased.

POTTERY

The pottery made by the inhabitants of the pueblo presents many striking and interesting features. Its outstanding characteristic is crudity both in methods of manufacture and in decoration.

The uniform crudity of the pottery was not due to a lack of practice in making it. Pottery at King's Ruin during the late period was abundant. Many pieces were buried with the dead and many bowls and ollas were made for domestic purposes. By far the most abundant of the wares made at King's Ruin was a coarse, undecorated gray ware. A plain red-brown ware of the same paste make-up as the gray ware was also common. Relative to these plain wares, a very small amount

of decorated ware was made. The two principal types of decorated pottery were black-on-gray and black-on-brown.

An analysis of all the sherds found in the excavation of rooms 1 and 5 of the pueblo reveals the following proportion of pottery types:

SHERDS FROM ROOMS 1 AND 5

Type of pottery	No. of pieces	Percentage
Plain gray	1,933	95
Plain red-brown	121	
Black-on-gray	47	4
Black-on-brown	40	
Black-on-white (intrusive)	9	1
Total	2,150	100

A source of error in this analysis lies in the fact that ollas were often decorated only near the rims. Therefore, many sherds that may have been from the lower parts of decorated ollas are probably included in the plain-ware counts. But the analysis nevertheless indicates that undecorated pottery was by far the predominant type at King's Ruin.

Plain Ware

Paste and Temper

The plain gray ware was the basic pottery. From it was developed both the black-on-gray and the black-on-brown. It was made of a very coarse gray or blackish paste to which was added much temper. The temper seems to have been derived from granite, for it consists of particles of quartz, feldspar, and mica (generally muscovite). The fragments are large and angular and not uniform in size. Sometimes pieces of quartz as large as 3/16 inch in diameter were used, and pieces as large as ⅛ inch in diameter are quite common. Actual measurements show that in the coarser plain wares the temper material makes up as much as 60 per cent of the whole volume of the paste, and that on the average the proportion of temper to clay is somewhat greater than one to two. The effect of this high proportion of very coarse tem-

per is the production of a pottery that is weak as well as very difficult to smooth to a good surface.

Both the plain gray and the plain red-brown or brown wares were made of the same paste, as described above. The difference in color is explainable as a result of different degrees of firing. The plain gray ware is not well fired. In cross section it generally shows either an almost uniform dark gray color or a dark gray center with very slightly lighter gray exterior and interior surfaces. In some cases the vessels show patches of reddish brown. The brown ware is generally dark or light gray in the center and on the interior surface and brown on the exterior surface and for a fraction of an inch inward toward the center. That the brown or red-brown color is due to more intense firing in an oxidizing flame and not to difference in composition of the paste has been shown by tests. Decorated and undecorated sherds of gray ware were subjected to intense, oxidizing heat and found to turn to the typical red-brown color of the plain brown ware. Therefore, it appears that the plain brown ware is merely the gray ware subjected to a different type of firing.

The method of building vessels at King's Ruin is not entirely certain. Attention has recently been called to two different methods of shaping vessels in the Southwest. One of these is the coiling method, well described by Guthe[12] and others; the second is the paddle-and-anvil method, described by Gifford.[13] The use of coiling and the paddle and anvil in the Southwest were by no means mutually exclusive practices. Moreover, there is no evidence thus far to show that the paddle-and-anvil method was used for anything more than purposes of finishing the surface after the vessel walls had already been built up by the coiling method. In those regions of the Southwest where the paddle and anvil were used (Turkey Hill near Flagstaff and in the Hohokam region), coiling was also practiced.

The evidence for the use of the paddle and anvil may be either direct or indirect. The anvils used in the process may

[12] Guthe, 1925.

[13] Gifford, 1928.

be found, as they were at Roosevelt 9:6,[14] or vessels may show rounded depressions on the interior surfaces—the impressions left by the anvil where it was held against the interior of the vessel. However, if vessels were well smoothed on both surfaces, impressions made by the anvil would be smoothed over, and the evidence of its use would be obliterated. Many of the vessels from King's Ruin show rounded depressions on their interior surfaces, such as we might expect as a result of the use of the paddle and anvil. The vessels that show such depressions had been smoothed subsequent to the formation of the depressions, the smoothing tool having touched only the higher areas, leaving the depressions comparatively rough. We cannot be sure whether these depressions indicate the use of the paddle and anvil, in view of the absence of any anvils at the site. But they do seem to indicate that some sort of tool, or perhaps a rounded pebble, was held against the interior surfaces of vessels while the exterior was being smoothed.

On the other hand, we have no direct evidence that coiling was in use. No corrugated pottery made of the local paste was found at King's Ruin. None of the pieces shows diagonal cleavage in cross section. Vessels do not show a tendency to break along horizontal in preference to vertical lines. On the other hand, the considerable thinness of the walls of several of the larger bowls, coupled with even surfaces and uniform thickness, and the large size of some of the ollas make it difficult to believe that coiling was not practiced.

Forms

Very little information is available in regard to the forms of the plain-ware vessels. Aside from some miniature vessels occurring in child burials, only four ollas and two bowls of plain ware were preserved from the excavation. The bowls are deep with direct, rounded rims, in all respects like the majority of bowls of decorated ware which are described below (page 35). The other type seems to be confined almost exclusively to the plain ware. It has a narrow mouth, a short neck, and somewhat pear-shaped body. The rim is

[14] Haury, 1932.

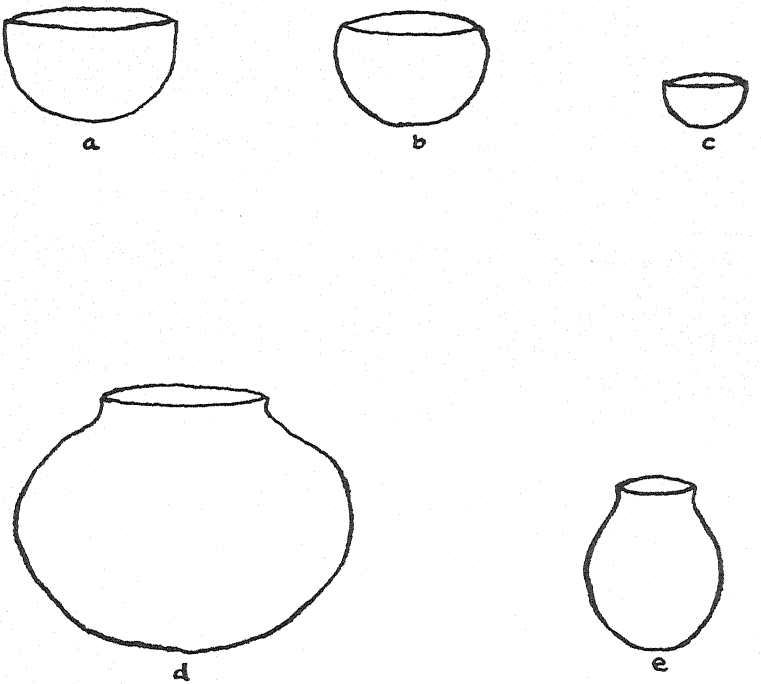

Figure 8.—Shapes of vessels from King's Ruin.

slightly outcurving. One specimen of this form has the following dimensions: depth, 10½ inches; maximum diameter, 10 inches; diameter of orifice, 4¼ inches (Plate VI).

Finish

The surfacing of vessels is rather uniformly poor. The coarseness of the paste naturally made it difficult to produce smooth surfaces. In general, however, surfaces are not lumpy as might be expected from the large size of the temper particles. Wherever large temper grains protruded on the surface, they were removed and the surrounding finer paste smoothed into the depression. This was the usual practice, but there are nevertheless a good many vessels in which large pieces of temper show up on the surface. Mica is always abundantly apparent on both interiors and exteriors.

Interiors of bowls are generally somewhat smoother than exteriors. Exterior surfaces are often characterized by horizontal striations for a few inches below the rim. Surfaces were never polished and no evidence of the application of a slip was found on any plain-ware vessel.

Decorated Wares

The following description of decorated wares is based on a study of one hundred eight bowls, four ollas, and a great quantity of bowl and olla sherds derived in excavation.

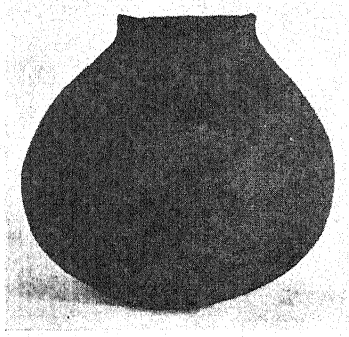

Plate VI.—Olla with exterior design.

There is no fundamental difference between the plain wares and the decorated wares. The usual southwestern custom of producing an inferior grade of pottery for cooking and strictly utilitarian purposes and another better grade which was decorated did not prevail at King's Ruin.

Using color combination as a basis of classification, King's Ruin decorated ware is divisible into two main types and three polychrome subtypes, as follows:

Black-on-gray
Black-on-brown
Polychrome
  Black-on-gray interiors, black-on-brown exteriors
  Black-on-gray interiors, brown-on-brown exteriors
  Black-on-gray interiors, brown-on-gray exteriors

Black-on-gray

Black-on-gray is the most common type of decorated ware. One hundred of the one hundred and eight bowls examined are black-on-gray, the remainder being divided between black-on-brown and polychrome. The analysis of sherds from rooms 1 and 5 of the pueblo does not seem to indicate the true proportions of black-on-gray to black-on-brown. Since the great majority of the specimens were derived from burials, it is possible that this merely indicates that for some

reason black-on-gray was preferred to black-on-brown for burial purposes. But other evidence, namely nonstatistical analysis of sherds from other rooms and trenches, indicates that the preponderance of black-on-gray in the burials is a result of a considerably greater preponderance generally of black-on-gray at the site.

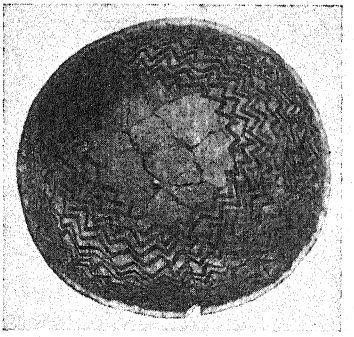

Plate VII.—Black-on-gray bowl with zigzag design.

Black-on-gray is characterized by a great variation in the color of the background. In the majority of pieces it is a very dull and dark gray verging on black. In some pieces the dark gray has a dark olive cast, and in another not inconsiderable group the gray is rather light. The point to be emphasized is that the gray shows a tremendous range of variation, indicating a lack of uniformity both in preparation of the paste and in firing methods. However, the black of the decoration is quite uniform. It is a dull black, of rather thin consistency. In some of the vessels it is very difficult to distinguish the design because of the similarity of the black to the dull gray background. In several instances it was necessary to wet the surface of the vessel in order to determine the design painted on it. In the lighter gray vessels, however, the black stands out boldly, if not brightly, from the background.

By means of Hawley Test 2,[15] it has been determined that the black paint is purely a vegetable pigment, a carbon compound, perhaps derived from the beeweed or guaco, which grows in the Big Chino Valley. In some instances it has proved possible to burn the paint completely away by applying intense heat, without the previous addition of the hydrofluoric acid of the Hawley Test. In spite of this fact, the paint is never fugitive and will not wash off.

[15] Hawley, 1929.

Surfaces of the decorated pottery are about the same as those described for the plain wares. There is a slightly better smoothing of bowl interiors in some cases, but surfaces are never polished. Two bowls, both with light gray backgrounds, appear to have been slipped on the interiors, but it was not possible to establish definitely the presence of a slip. In general, it may be said that a slip was not used.

The vessel shapes of black-on-gray show a remarkable uniformity. Only two forms have been found—bowls and ollas. Bowls, as might be expected, are in the great majority in the burial offerings. This overwhelming preponderance of bowls to ollas is not, however, to be considered a general characteristic of the decorated pottery at King's Ruin. Sherds found in the excavation indicate a considerable number of decorated ollas, although exact figures as to proportions have not been computed.

Not only are the vessel forms limited, but the two types show an impressive uniformity (Fig. 8). With rare exceptions bowls are deep, constituting more than a hemisphere. Bottoms are rounded, with walls that come up in a spherical curve, completing the curve of the hemisphere and extending either into the curve of the upper hemisphere (Fig. 8, b) or continuing vertically for a short distance above the equator (Fig. 8, a). Rims are rounded at the top and are either very slightly incurving or perfectly straight. The sizes of bowls range from a 11½-inch orifice and a 7½-inch depth to a 3⅜-inch orifice and a 2-inch depth. The majority of bowls examined, however, are of nearly the same size, averaging about 10½ inches for the orifice and 6½ inches in depth.

One shallow bowl with flaring walls and three specimens of the usual deep variety with slightly outturned, beveled rims were found. These are the only variations from the general traits outlined above.

Enough pieces for reconstruction of only two black-on-gray ollas were recovered. Sherds, however, indicate that black-on-gray ollas, similar to two polychrome ollas found in the excavation, were commonly made. Accordingly, these polychrome ollas will be included in the description here as

typical of decorated ollas generally. Two types are indicated in these specimens. One is large, with a very short neck and a body with the horizontal dimension greater than the vertical dimension. One specimen of this type has dimensions approximately as follows: height, 1 foot 6 inches; greatest diameter, 2 feet 2 inches; and orifice, 13¼ inches by 11½ inches. The other type is more elongate, with a longer neck. The approximate dimensions of the black-on-gray specimen of this type are: height, 10 inches; maximum diameter, 10 inches; and orifice, 7½ inches. In both types the rims are rounded and slightly outcurved at the top.

Decoration

An effort was made to determine the sequence of design types. In view of the lack of stratigraphical evidence, it was not supposed that any very exact or conclusive results could be obtained. But it was supposed that there might be a correlation between the more complex and better executed designs and better finish and surfacing. Assuming that there would be an advance in the technique of pottery making during the occupation of the site, we would expect the better-made pieces to occur later in general than the poorer pieces. It was thought that the better types of decoration might occur

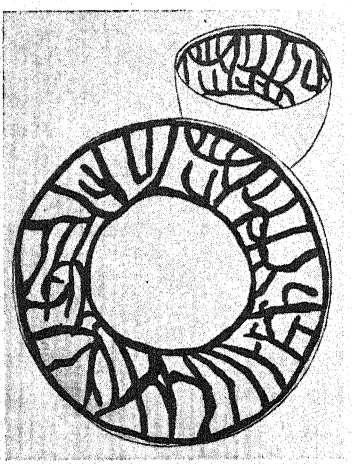

Figure 9.

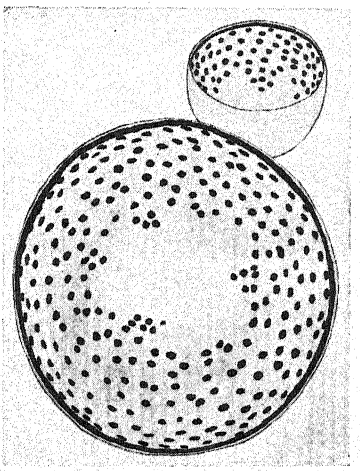

Figure 10.

Figure 11.

in greater majority on the better pieces of pottery, and that if such a correlation did occur, then it could be assumed that such designs were the later types, whether they were made toward the end of the occupation of the site or during the climax of developments there, if that were previous to the abandonment of the site. However, study showed that the cruder designs occurred on well-finished as well as more poorly finished vessels, and that all the types of design elements occurred on vessels of all types of finish. Moreover, vessels of good finish and better design occurred in the same burials with vessels of poor finish and crude design. Evidently, then, poorer types of pottery were made contemporaneously with the better types. We can therefore only describe the pottery at King's Ruin without reference to chronological development.

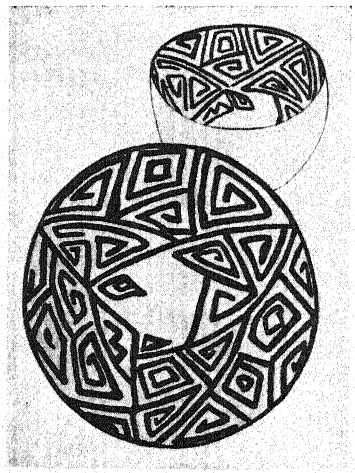

Figure 12.

It may safely be said that the King's Ruin potters did not understand design. They were not only incapable of handling a paint brush with accuracy and skill, but they also seem to have had no sense of symmetry. The designs are either conglomerations of unintegrated units (Fig. 14) or monotonously repeated, simple elements (Fig. 16). Even the latter sort of decoration is usually characterized by some

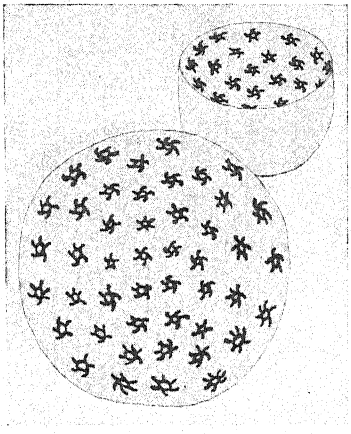

Figure 13.

ill-considered addition to an element (Fig. 16), or the introduction of a new element (Fig. 12) in such a way that any simple symmetry that might have been realized is totally destroyed. When the symmetry of a repeated element design is not destroyed by additions or introductions, it is generally destroyed by the failure of the potter to imagine her design as composed within the pottery surface before her, with the consequent crowding of some of the design elements. This characteristic disregard of symmetry and failure of the imagination, together with the consistent carelessness of execution of the simplest lines, or even dots, indicate a total lack of artistic sense, or ability.

The design elements in use were few and simple. They consist of broad lines, large or small dots, solid triangles, broad-line zigzags, concentric triangles, simple crosses, crude scrolls, occasional crude human or animal forms, and the key. Narrow lines, terraced figures, interlocking scrolls, and other such typical pueblo design elements were not in use. All of these elements are badly drawn. Many of the dot decorations seem to have been spattered on the surface. Where lines join, they are often overlapped or finished with a flourish that is the product of pure carelessness.

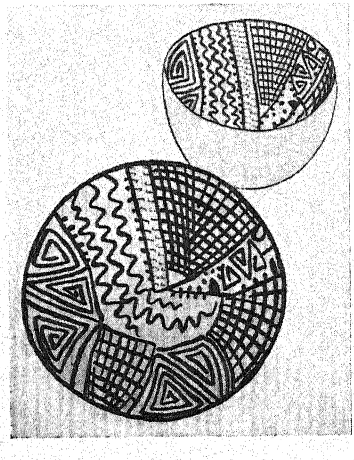

Figure 14.

Special mention must be made of the key. It was the

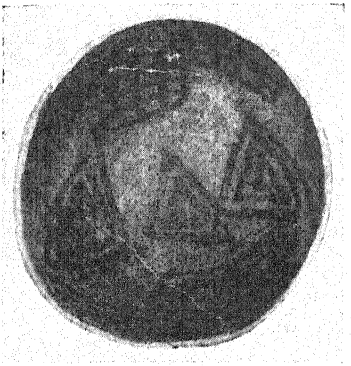

Plate VIII.—Black-on-gray bowl interior.

element in most common use at King's Ruin. It was used, either alone or in combination, in almost half of the vessels examined. The King's Ruin potters were inordinately fond of it, in spite of the fact that they were incapable of handling it effectively. It was made in various ways, with from one to three complete turns and formed either triangular or quadrilateral figures. Sometimes it occurs in triangular form, pendant from the rims of bowls (Fig. 11), and sometimes it occurs with triangles or other elements in a more complex design (Fig. 18), but the most characteristic use of it is as a repeated element covering the whole or greater part of the interior of a bowl (Fig. 16). In this use, the decorated surface is divided into a combination of rectangular and triangular areas, each of which contains a key.

Dots come next in frequency of occurrence (Fig 10). They may be spattered irregularly over the interior of a vessel (generally the olla); they may be arranged in a band, covering all but the center of a bowl; they may be used in combination with other elements, arranged along broad lines or triangles; or they may occur in groups enclosed in oval or quadrilateral figures covering the whole interior (Plate IX). Solid triangles are common, pendant to lines or to triangular key figures. Concentric triangles or diamonds are frequently used in the manner described above for the key. Crosses and zigzags are commonly found, either

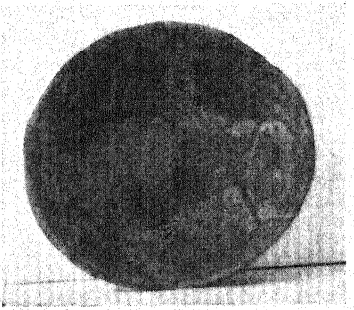

Plate IX.—Interior of black-on-gray bowl, showing Yuman type design.

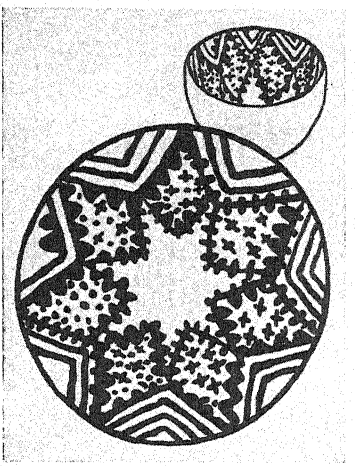

Figure 15.

as the sole element used in a decoration or introduced haphazardly into a more complex design (Fig. 15). Life forms are of rare occurrence. Broad-line cross-hatching occurs on only three bowls (Plate VIII). The true scroll is confined to the exteriors of polychrome vessels (Plate VI).

Black-on-gray bowls are decorated on the interiors and show a variety in the arrangement of design elements. The most common form is the band, covering the greater part of the interior surface, leaving the center bare. In the majority of pieces the band is unframed (Fig. 16), the elements extending directly up to the rim. In some cases the band is framed at the top with a broad black line (Fig. 10), and occasionally there is a broad

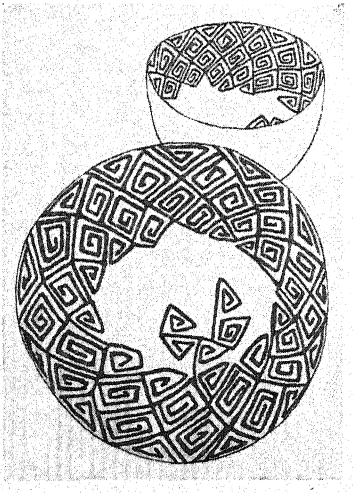

Figure 16.

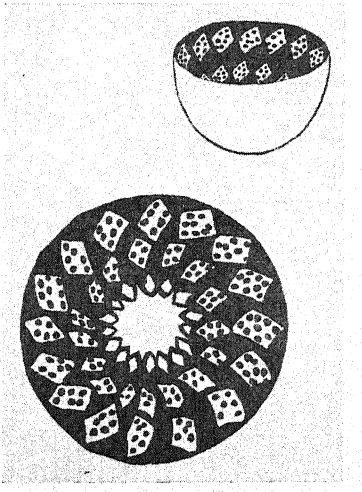

Figure 17.

Figure 18.

framing line at both the top and bottom of the band (Fig. 9). The next most common type of design arrangement consists of widely separated elements, usually triangular keys, pendant from a broad line just below the rim, leaving the greater part of the interior surface bare (Fig. 11). Other arrangements are chains of keys or zigzag lines pendant from the rim (Plate VIII); allover designs of dots or connected keys as described above; and a quadrate division of the interior by two sets of zigzag lines extending across the whole surface, leaving the greater part of the interior bare. A form which can scarcely be called an arrangement consists of broad black lines drawn in a completely haphazard manner over the whole or part of the interior (similar to Fig. 9). In general, however designs are arranged, they lack unity and symmetry.

Ollas present the unique feature of being decorated on the interiors. Three forms of such decoration may be distinguished. One black-on-gray olla found in a burial has a series of broad lines, arranged at intervals of about 2 inches, pendant from the rim and extending 5 or 6 inches into the interior. Another shows an interior completely covered with broad black lines arranged with no plan whatever. A third form has two series of waved parallel lines, the first series pendant from the rim, the second occurring halfway down the interior walls. Small dots have been spattered irregularly over most of the interior.

Judging from sherds found in the excavation, interior decoration of ollas was no unusual thing at King's Ruin but rather the general practice when ollas were decorated at all.

Black-on-brown

The other principal type of decorated ware is black-on-brown. Seven complete black-on-brown bowls were recovered in the excavation. Aside from the difference in the color of the background, which, as we have pointed out, is a result of more intense firing, this ware presents no features not already discussed in connection with black-on-gray. Vessel forms, decoration, and finish show no consistent differences from those of black-on-gray.

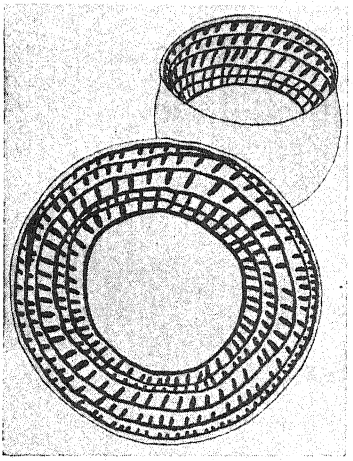

Figure 19.

Polychrome

Three bowls, two ollas, and many sherds show the use of more than two colors. Two of the bowls are black-on-gray on the interiors and brown-on-gray on the exteriors. The ollas and most of the sherds are black-on-gray on the interiors and brown-on-brown on the exteriors. Both the three-color and the four-color wares make use of a color which we have not thus far described—the brown paint decoration of the exteriors. This brown is a distinct color from the brown of the background. It is not the red-brown of the King's Ruin paste of more intense firing but is much darker. It is a dull paint applied rather thickly so that its surfaces are lumpy and rough. Not all the paint applied has penetrated the vessel. The thick portions may be washed or rubbed off, but when this is done color is still apparent on the surface. The color left on the vessel after washing presents the appearance of a thin stain of dark brown, streaky and irregular.

Whether the exterior brown decoration occurs on bowls or ollas, it usually consists of a broad-line, true scroll (Plate VI), repeated at irregular intervals just below the rim. The

scrolls are crudely done and are rather large, covering the greater part of the vessel surface.

In one bowl and many sherds with exterior decoration, the designs are carried out, not in the brown paint described above but in the usual black of the interior decoration. Such decoration consists most commonly of broad haphazard lines or of irregular acute-angled figures.

Variant Decorated Types

Two bowls, an olla, and several sherds deserve mention as variant types. One bowl of the usual deep variety, made of local paste, has a design composed of human figures and other crude life and geometric forms. The background is a dull gray. The design is executed in a rusty, faded color which may be faded black. The color is strongly reminiscent of the faded black occurring on the early bowl mentioned above (page 20).

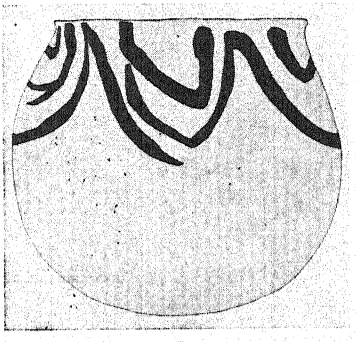

Figure 20.

Another small bowl, made of local paste, has a decoration in relief. Four groups of three small, pointed knobs are arranged at regular intervals about the exterior of the vessel. The vessel is brown in color and has no other decoration.

Two sherds of different vessels were found which are the typical black-on-gray on the interior but are decorated on the exterior in red. The red is in no way related to the usual brown exterior decoration of polychrome ware. It is a good, fairly bright red, resembling that in use in late red-on-buff of the Hohokam region. The exterior backgrounds are brown. In one case the design is the triangular key arranged in pendant form from the rim, repeated at intervals around the vessel. In the other sherd the red decoration, although the sherd is too small to make exact determination possible, appears to be the key, arranged in quadrilateral forms.

Other Objects of Clay

Toy Vessels

Several miniature clay vessels were found in the excavation, two in the rooms of the pueblo, and two in child burials. The two vessels found in the pueblo were unfired. One is a ladle of bowl-and-handle variety, 2⅛ inches long. The other is a flat-bottomed bowl with straight sides, 1¼ inches in diameter and ¾ inch deep. Both were made of paste finer than that commonly used in the usual pottery of King's Ruin. The paste was gray and contained no temper. The occurrence of the ladle is interesting, in view of the fact that no large ladles of local ware were found in the excavation.

The toy vessels found in the child burials were fired. One of these was an olla and the other a bowl. Both are plain brown, made of local paste. The bowl is shallow, 1⅛ inches deep and 2⅞ inches in diameter, while the olla is 3⅛ inches in depth and 3⅛ inches in greatest diameter.

Clay Figurines

One clay image of a bird and two human figurines were recovered in the excavation. The human figurines are not available for description. The bird has a crudely molded spherical body with wings and tail indicated by pinched-up portions of the clay. It is about 1¼ inches long (Plate X, a).

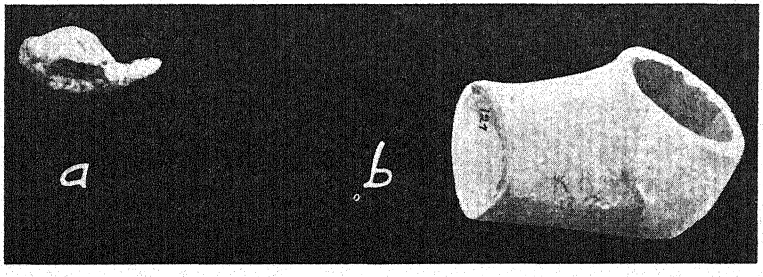

Plate X.—Clay objects; *a*, bird figurine, *b*, elbow-shaped tube.

Effigy Vase

A unique clay vessel was found with a child burial (Plate XI). It was made of local brown paste and stands apart from

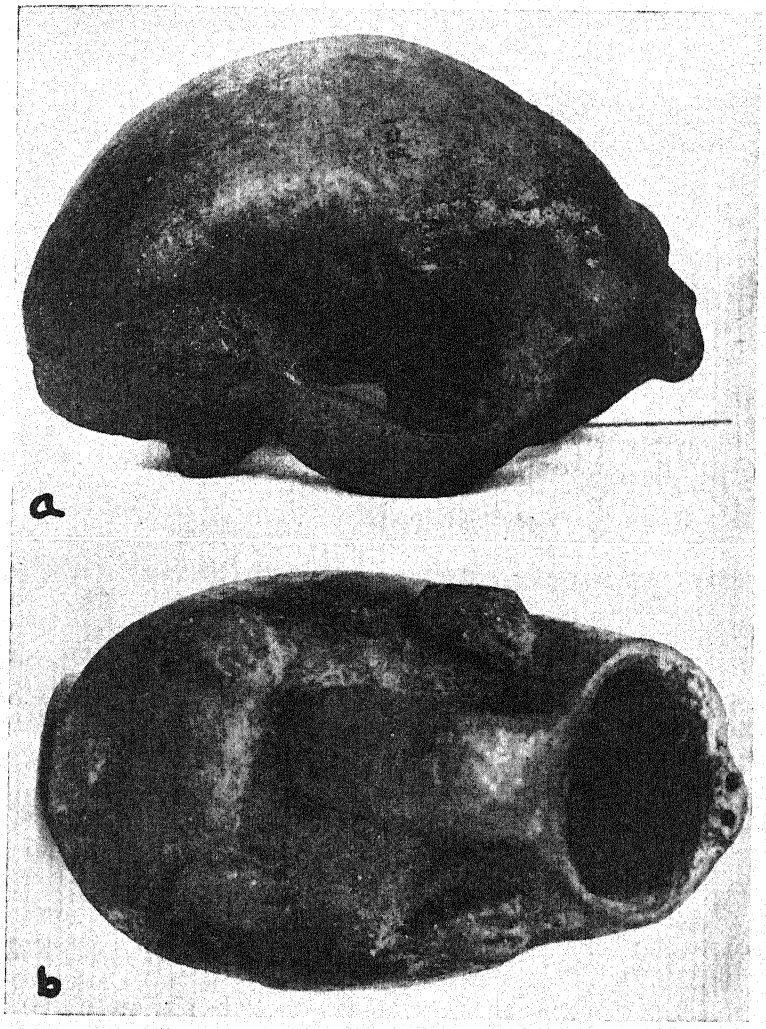

Plate XI.—Effigy vase of clay found with a child burial; *a*, side view, *b*, bottom view.

all other ceramic products of King's Ruin in excellence of conception and manufacture.

Pottery Discs

Many discs made of potsherds were found, thirteen having been discovered in the pueblo, ten of which were perforated in the center. They vary in size from 1 inch to 2¾ inches in diameter. Some were carefully rounded, others were rough and angular at the edges. The majority are made of intrusive black-on-white or black-on-red sherds.

Clay Tube

An elbow-shaped tube of black-on-white pottery of non-local paste was found on the floor of one of the rooms of the pueblo. In greatest length it is 2¼ inches; the larger opening at one end is circular, 1½ inches in diameter; the other end opening is oval, 1⅜ inches in greatest diameter (Plate X, b). The thickness of the walls is about ⅛ inch. Part of the exterior is covered with hatched black lines. It appears to have been part of a larger object from which it was sawed at both ends. Its use is unknown.

INTRUSIVE POTTERY

A great deal of instrusive pottery was found in the excavation. Nine bowls, a ladle, a canteen, two pitchers, and a seed jar were found with burials. Two almost complete small bowls were found in the rooms of the pueblo. In addition many intrusive sherds were found on the surface, in the trenches, and in the fill of the rooms of the pueblo. Four distinct types of black-on-white, two types of black-on-red, two types of polychrome, two types of corrugated, a plain red, and red-on-buff are represented.

A tabulation of the sherds found on the surface and in the excavation is not possible, because all sherds found were not saved. But a description of the types found and some data as to the frequency of their occurrence can be given.

Black-on-white

The following are types of black-on-white:

1. A black-on-white characterized by decoration in groups of very narrow parallel lines which frequently overlap at junctions, small solid triangles, and pendant dots. This pot-

tery is identical with, or at least very similar to, that described by Kidder in the San Juan drainage and subsequently designated "Kana-a Black-on-white" by Hargrave in the Flagstaff region.[16]

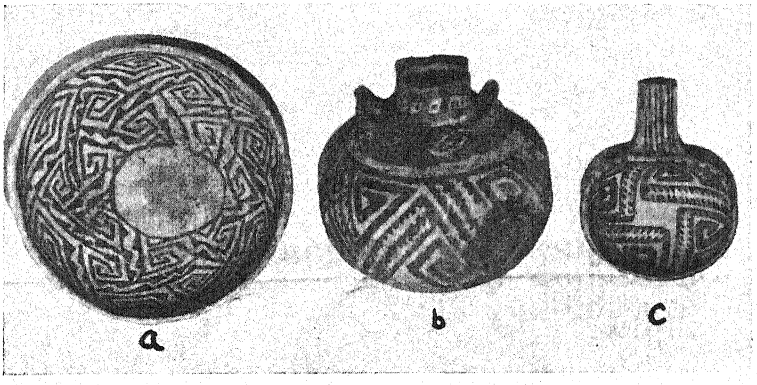

Plate XII.—Intrusive black-on-white pottery.

2. A black-on-white characterized by decoration in broad black lines, solid triangles and squares, and large dots. This pottery is probably identical with that described by Hargrave as Deadman's Black-on-white.[17]

3. A black-on-white characterized by rather narrow lines to which small triangles or barbs are often affixed, and interlocked keys. Some pieces have a black core in cross section; others are of uniform white or grayish paste throughout. This pottery seems to be identifiable with Flagstaff Black-on-white described by Hargrave.[18]

4. A black-on-white characterized by negative designs. This is the type of Kayenta Black-on-white described by Kidder.[19]

Deadman's Black-on-white and Flagstaff Black-on-white were more common at King's Ruin than were the other two types. But a dozen or more sherds of the early type (per-

[16] Kidder, 1924, p. 74 and Hargrave, 1932, p. 15.

[17] Hargrave, 1932, p. 15.

[18] Hargrave, 1932, p. 16.

[19] cf. Kidder, 1924, p. 31.

haps identical with Kana-a Black-on-white) were found on the surface and in trenches. A few sherds of Kayenta Black-on-white with negative design were found on the floor of Room 10 in the pueblo.

Black-on-red

One type of black-on-red is characterized by a black core in cross section, overlapping narrow lines of decoration, and a faded quality of the black.

Another type is characterized by a yellowish cast of the paste at the surfaces, sherd temper, and decoration in widely spaced, narrow parallel lines, often in the form of diagonal hatching. This is probably identical with a late black-on-red as described by Gladwin.[20]

Only a few sherds of the former type were found, some below the floor of Room 1 in the pueblo and several in the fill over the burial ground. The fragments of two ollas of the latter type were found in rooms 6 and 7 of the pueblo, those in Room 6 being found in the debris filling the large storage pit.

Polychrome

This type is characterized by decoration in black-on-red on an orange background and an irregular broad line in red on the exteriors of bowls. Most of the fragments found had the black lines of decoration outlined in white. This is the type of Kayenta Polychrome as described by Kidder[21] and others.

A dozen or more sherds were found, some on the floors of rooms in the pueblo, others in the trenches in the fill west of the pueblo.

Corrugated

There is a gray ware characterized by wavy corrugations. This is probably identical with a type described by Hargrave[22] widespread in northern Arizona.

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[20] Gladwin, 1930 (c), p. 174.

[21] cf. Kidder, 1924, p. 71.

[22] cf. Hargrave, 1932, p. 13.

A brownish corrugated ware is characterized by burnished, black bowl interiors, probably the same as Elden Corrugated, described by Hargrave.[23]

Only a few sherds of each of these types were found. One almost complete, small bowl of the second type was found on the floor of Room 7 in the pueblo.

Plain Red

This is a ware characterized by coarse, sandy black paste, rough surfaces, and a red slip of uneven quality. This is perhaps the same as Deadman's Fugitive Red, described by Colton.[24] An almost complete small pitcher of this ware was found in Burial 20.

Red-on-buff

Only three sherds, all very small, were found in the excavation. These were on the surface and in the trenches west of the pueblo. The pieces had an apparently early type of red-on-buff decoration, being characterized by wavy parallel lines, but they were slipped.

The intrusive pottery indicates that the trade relations of the people of King's Ruin were almost exclusively with pueblo people to the north and northeast. No typical Gila Red Ware or Gila Polychrome was found and only the few sherds of red-on-buff. The above described sherds of black-on-white, black-on-red, and corrugated have a time range of from the latter part of the Early Pueblo Period to the latter part of the Late Pueblo Period in the Kayenta and Flagstaff regions. This means that from the time of the building of rectangular pit houses in the western San Juan drainage to at least as late as A.D. 1200 the people of King's Ruin were in constant contact with the northern people and during this whole time obtained pottery of the most common types made in the north.

STONEWORK

The people of the Chino Valley were favored with the occurrence of all of the most suitable rocks for stone imple-

[23] cf. Hargrave, 1932, p. 19.

[24] cf. Colton, 1931, p. 9.

ment making in their immediate vicinity. All of the commonly used rocks in the Southwest, including even obsidian,[25] were and are to be found within a radius of 20 miles of King's Ruin.

Stonework at King's Ruin was not substantially different from that at other prehistoric sites of the Late Pueblo Period in the Southwest. The three common methods of stoneworking—chipping, pecking, and grinding—were in use. There was an abundance of stone tools used for domestic purposes and a smaller proportion of weapons used in hunting and perhaps in warfare.

Arrow- and spearheads, drills, knives, and scrapers were the principal chipped implements made. Metates, mortars, manos, mauls, axes, hammer stones, grinding stones, arrow polishers and reducers constitute the pecked and ground tools.

Arrowheads

Arrowheads constitute the greatest number of chipped implements. Only ten of these were found in the actual excavation of the pueblo, but thirty-five were found with various burials in the cemetery, and an uncounted number were found on the surface by excavators and previous visitors to the site. Black obsidian, gray flint, and a translucent white chalcedony were the principal materials in use. A few points were found which were made of varicolored chert and of the less suitable material, basalt.

The points varied in length from 5/8 inch to 2 inches. Four general types are distinguishable, varying in the form of the base. The majority have a straight base with straight edges (Plate XIII, c and d). A third form has a straight base with two shallow, transverse notches just above the base (Plate XIII, c). The fourth type, of very rare occurrence, has a base consisting of a narrow stem squared off roughly at the end.

Of fifty-four points picked at random from the surface, forty-two were made of black obsidian and twelve of gray flint. Of these, thirty-five had straight bases and straight

[25] Black obsidian occurs at present locally in the Big Chino Valley in the form of numerous pebbles in the bed of Chino Creek.

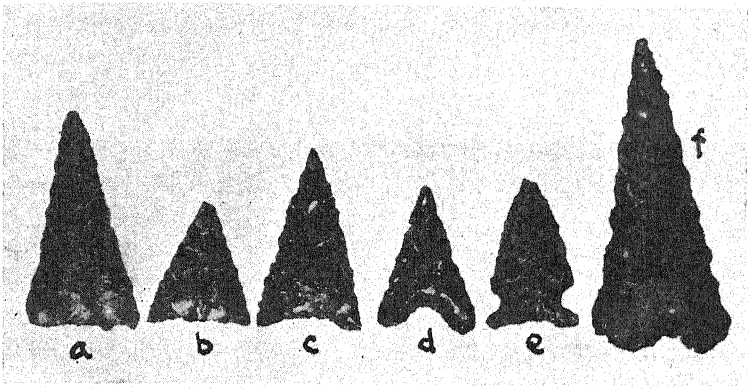

Plate XIII.—Obsidian arrowheads.

edges; thirteen had concave bases and straight edges; four had notches just above the base; and two were of the stem type.

Four points of the straight-base type were found with burials with a gum of some kind still adhering to the bases (Plate XIII, f), indicating a method of hafting by insertion in the split end of the arrow shaft and fastening with the gum.

Spearheads

The fragments of two well-made spearheads which must have been at least 6 inches long were found with two burials. Their bases were broken off (Plate XV, b).

Knives

Scrapers and knives made by the chipped-stone technique were in common use at King's Ruin, and many of them show very good workmanship on the cutting edges. The popular gray flint, obsidian, basalt, jasper, and chalcedony were in use as materials.

Ten knives were found in the rooms of the pueblo. Some of these have two cutting edges (Plate XIV, a), while others have but one; some were unmodified flakes with cutting edges on most of the periphery.

The knives with one cutting edge are irregular in form, varying from triangular to oval. They generally show a

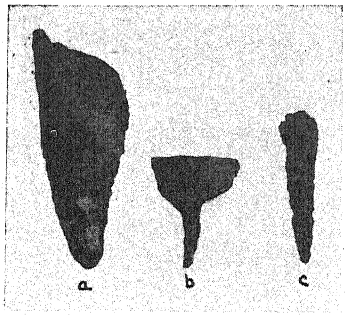

Plate XIV.—Knife and drills.

minimum of retouching, because the edge resulting from the original flaking is in most parts sufficiently sharp. One of this type that deserves special mention has a concave cutting edge which is well adapted to the smoothing of round objects such as sticks of wood.

The knives with two cutting edges are also irregular in shape, but many of them show careful retouching of the edges and in some cases chipping of the surface of the tool (Plate XIV, a).

End Scrapers

A special type of scraper consists of a form with blunt, curved cutting edge (Plate XV, a). Five of these of chalcedony, very well made, were found with a burial. They closely resemble one another in shape and size. Their length is about 3 inches, their width about 2 inches.

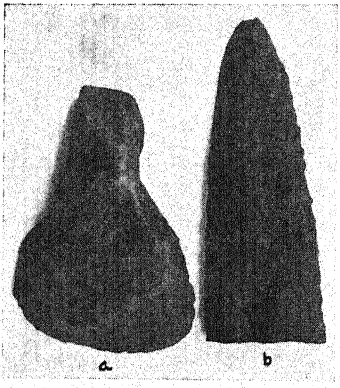

Plate XV.—*a*, End scraper, *b*, spearhead.

Drills

Six drills were found in the rooms of the pueblo. Four were made of black obsidian, one of basalt, and one of gray flint. One is a fortuitous flake of obsidian which had flaked off with a curved, sharp point at one end. The others represent two different types. One type has a narrow shaft and a very wide base which allows the user to grasp it firmly (Plate XVI, b). The other type has a narrow base (Plate XIV, c).

Digging Tools

Another type of tool which shows a small amount of chipping in the manufacturing process consists of what were probably digging tools used mainly in agriculture. These were made of a fine-grained igneous rock which had occurred naturally in plates of from ¼ to ¾ inch in thickness.

It is probable that the material is diabase or basalt which had been faulted and the platelike pieces produced by shearing in the fault zone. Fifteen digging tools made from this material were found in the rooms of the pueblo.

The method of working varied. In some cases the rocks had been found with edges quite thin, already sharp enough to cut the soil. In such instances the edge was very slightly serrated by a small amount of chipping. In other cases, if a piece suitable in shape and size were found with the edges too thick and blunt, they were ground down and subsequently chipped. In some instances the edge was not worked at all but was used as found. That these rocks were digging tools is indicated by the fact that they seem to have been too blunt to cut effectively into anything but the soil. Many of them apparently have had their edges injured by contact with stones in the soil.

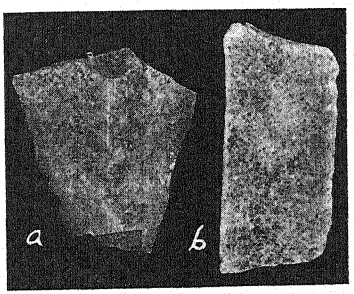

Plate XVI.—Digging tools.

Some of these tools are irregular in shape, but the majority seem to have had a certain regularity. One group has a single digging edge (Plate XVI, b). Another group, although all the stones found were broken, appear to have been more or less triangular (Plate XVI, a), with two long sides of the triangle ground or chipped to good digging edges. Those of the former group are generally roughly rectangular, and varying in size from about 9 inches long by 5 inches wide to 5 inches long and 2 inches wide. The latter group vary in size about as much as do the rectangular pieces.

Metates

Pecked and ground implements of typical southwestern forms were found in considerable abundance. Only eight metates were found in the debris of the rooms of the pueblo—some whole, others in fragmentary form. Still others were found elsewhere in the excavation—in the region of the burial ground and in connection with the small structure to the north of the compact pueblo. The metates found are of the grooved type, with almost flat, slightly concave bottoms and straight side walls. They were made of "malpais," scoriaceous basalt, or of boulders of coarse-grained igneous rock. One found in Room 6 has straight side walls about 5 inches deep and was very well made. Many of the metates were of similar good manufacture and were deep, indicating perhaps long use.

The broken parts of eight small sandstone grinding slabs were found in the rooms of the pueblo. These seem to have been irregular in shape and were probably not more than a foot in length in any case. They show shallow depressions of irregular shape in which the grinding had been done. Two of these found in Room 6 show traces of hematite dust and perhaps indicate the chief function of the implements, that is, grinding paint stone.

Manos

A total of fifty-nine manos were found in the excavation of the pueblo. Twenty-eight of these were found in Room 5. They were made of various coarse- and fine-grained igneous rocks, the most common of which were a porphyritic basalt and a porphyritic rhyolite. Manos vary in size from 6 by 3¼ inches to 12½ by 3¾ inches. The most common form is roughly rectangular with slightly rounded corners, plano-convex in cross section. A few were found which have two grinding surfaces, that is, they are flat on the two major surfaces. No forms triangular in cross section were found.

Mortars

Another class of grinding implements consists of small mortars. Two of these were made of vesicular lava rock. One found in Room 4 of the pueblo is circular, 2½ inches in

diameter, 1¾ inches deep, with a depression of 1¼ inches tapering almost to a point.

Grinding Stone

One bell-shaped grinding or pounding stone made of basalt was found in the excavation in Room 5. The rounded, smaller end shows wear; the flat, larger end could have been readily grasped, and the instrument would have been an efficient tool for pounding or grinding. It is 3½ inches high and its greatest diameter at the large, flat end is 4 inches.

Axes and Mauls

Axes were all of the three-quarter-groove variety. Ten were found in the course of excavation. They were made of diorite and of some fine-grained igneous rock. The largest is 6 inches long with a four-inch blade; the smallest is 4¼ inches long with a 2⅛-inch blade. The axes are divisible into two types as regards the character of the edges of the grooves. Six have either the fore edge (Plate XVII, b) or the rear edge (Plate XIV, a) or both raised and rounded above the face and poll of the ax. Four do not have raised-

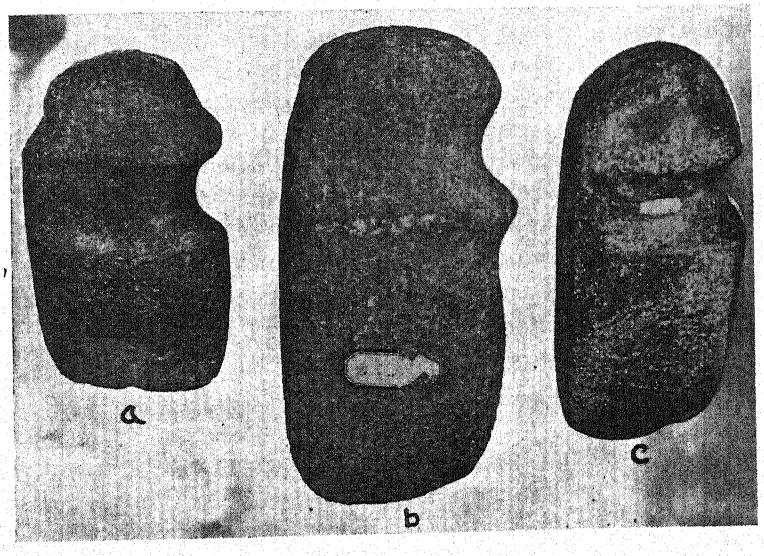

Plate XVII.—Axes.

groove edges. There is a pronounced taper in the polls of five of the specimens (Plate XVII, a).

Six of the axes show some evidence of polishing, but in none had smooth surfaces been attained. The roughness of finish characteristic of other stone tools from King's Ruin is well emphasized in both axes and mauls.

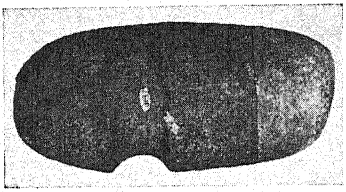

Plate XVIII.—Maul.

Three mauls were found, two being merely rough pebbles with shallow and irregular grooves completely encircling them. The third is a very finely shaped unpolished maul with a deep three-quarter groove. It is made of diorite, is 7 inches long and 3½ inches in greatest diameter (Plate XVIII).

Arrow Polishers

Several tools for the working of arrows or other wooden or bone objects were found, two of which were found in a burial. They are each about 4 inches long and 2 inches wide, with a single groove running lengthwise. They are made of a very coarse, brown sandstone. The grooves are rough and very abrasive. Perhaps shafts for arrows were shaped by abrasion in the grooves. Subsequently, arrow shafts must have been polished and smoothed in polishers similar to the one found in the excavation. This was the only specimen of arrow polisher found. It consists of a small bell-shaped stone of light, coarse-grained igneous rock, 3 inches in greatest diameter. The large end had been well smoothed by grinding. The small end contains a groove 2 inches long and ⅜ inch in width.

Rubbing Stones

Several rubbing stones with one flat surface were found; these may have been used for smoothing the plaster of walls or for leveling and smoothing floors in the pueblo. They were made of basalt and various coarse-grained igneous rocks.

Punch

A single drill or punch was found which was made of a piece of schist. Only a portion of it was recovered—about an inch of the pointed end. It is ½ inch in diameter at the broken end and tapers to a rather blunt point. It had apparently been ground to shape and subsequently smoothed and polished.

Whetstones

Stone implements which show no original shaping or working are whetstones and polishing pebbles. Whetstones and fragments of whetstones were rather numerous in the pueblo. Ten whole ones were recovered. All are made of flat plates of schist varying from ⅜ to ⅛ inch in thickness. In length they vary from 7½ to 5¾ inches, and in width from 2¼ to ¾ inches. Pieces of schist had apparently been broken off in roughly rectangular shapes; no attempt had been made to shape the pieces. They all show irregularly shaped depressions where other objects had been ground.

Polishing Pebbles

Polishing pebbles were not especially numerous. They were pebbles picked up in the stream and were of quartz, quartzite, jasper, or similar rocks. Some of them show very evident long use on one or more faces. Since pottery was not polished at King's Ruin, one wonders for what the polishing pebbles were used.

Palette

In the fill overlying the graveyard there was found a fragment of a small palette. The original had evidently been rectangular and was 2⅞ inches in width. It was made of gray schist, similar to the schist of some of the whetstones. The interior of the piece had been cut out, leaving a narrow raised border about 1/16 inch high. The border was ¼ inch in width at the end and 3/16 inch on the long sides. The end border was decorated with six incised acute angles pointing inward. The side margins were decorated with groups of seven incised parallel lines. Adhering to a portion of the interior and part of one side margin was an apparently vitrified green and brown substance.

Disc

Another interesting article of schist consists of half a disc with a perforation in the center. The diameter of this disc is 2⅞ inches. It is a little more than 1/16 inch in thickness. The perforation near the center is 3/16 inch in diameter. The object is not well made, its margin having been only roughly shaped and the perforation carelessly made.

Balls and Ceremonial Objects

Five balls of pumice and vesicular basalt were found. They vary in diameter from 1⅝ to 2½ inches. None is a perfect sphere but all are roughly spherical. Also made of vesicular basalt and rhyolite are three roughly cylindrical objects. These are from 2 inches to ¾ inch in diameter, and the largest is 4¾ inches long and 1½ inches in diameter. The small one is well-shaped and comes to a blunt point at one end. Since these show no evidence of wear, the only use that can be suggested for them is that they were ceremonial.

Calcite and quartz crystals were found in burials and were evidently regarded, as they were elsewhere in the Southwest, as of special power. In addition some large calcite crystals were found in the rooms of the pueblo, one as large as an inch and a half on a side.

In general, stonework at King's Ruin is not of a high standard. Chipped implements show better workmanship than do the pecked or ground implements when subjected to critical examination. But the chipped implements, like the pecked implements, suffer often from a lack of care in finish. Many of the arrowheads are fine examples of chipping, but with the exception of one drill, none of the large pieces of chipped work shows much care in execution except for the production of the cutting edge. The symmetry or finish of the pieces was little considered. In general the same is true of the pecked stonework. Mention has been made of the stone axes and mauls, which although fairly well shaped are never polished over the whole surface; in all of them, original irregularities in the rock or depressions left by pecking are not ground down. Several of the metates were well made, as were some of the manos,

but the general impression left by the stonework at King's Ruin is that utility was the prime concern, with little attention paid to finish. If an implement were serviceable and had only sufficient labor put on it to make it an efficient tool, it was enough for the people of the pueblo. They were acquainted with the principal forms of the best tool types of their time and region and knew how to reproduce them, but they had not the patience nor the inclination to make a perfect job of any implement they manufactured.

BONEWORK

Work in bone at King's Ruin presents a variety of forms; tools, musical instruments, and ornaments were made. Deer and rabbit bones were in use. The majority of bone objects uncovered were made of the metapodials of deer.

Awls

Of tools, awls are by far the most common type. As made at King's Ruin, they may be classified as follows:

A. Deer or large mammal bones
   1. Awls with handles of split but otherwise unmodified articular ends of bones (Plate XIX, a and c)
   2. Awls with handles of modified articular ends of bones (Plate XIX, b)
   3. Awls made of split and modified shafts of bones without articular ends
   4. Awls made of the ulna unmodified at the articular end (Plate XIX, d)

B. Rabbit bones
   1. Awls made of the radius, unmodified except at the point

C. Splinters of unidentified bones

Awls of the first class are in the majority. The greater number of these were made of the metapodials of deer or antelope, utilizing the distal articular ends as the handles of the tools. The method of manufacture was to split the bone longitudinally through the center. The split portions thus obtained were cut transversely at various distances from the

articular ends. Then the end opposite to the articular end was worked rather abruptly to a point, apparently by grinding on a rough surface such as sandstone. The articular end was left unworked, the natural configuration of the bone forming a satisfactory and rather ornamental handle. In some instances the proximal end of the bone was used, having been worked in the manner described above. In other cases the bone utilized was of an immature animal in which the epiphyses had not yet fused with the shaft. The resulting handle in such cases has four points at the end, the natural shape of the end of the bone before epiphyseal closure.

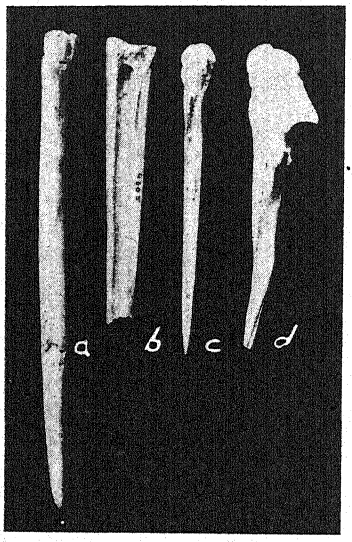

Plate XIX.—Bone awls.

The second type of the first class seems to have been made in the same way as the first, except for the fact that the handle had been ground down until the natural configuration of the articular end is not determinable. The third type also shows the same method of manufacture, except for the fact that the articular end had been entirely cut away. Plate XIX, d, shows the only specimen of ulna type recovered in the excavation.

All the awls of the first class show a minimum of working. As a rule the bodies of the awls are very slightly smoothed and rounded. Near the point where the tool has been worked most, flat surfaces are often apparent where the workman had not taken the trouble to round them down. The shaft of the awls often shows the coarse striations of the first grinding. A notable characteristic of the King's Ruin awls is the abruptness of the point. The length of awls of the first class ranges from 2⅝ to 10 inches.

Four awls of the second class made of the radii of the rabbit were discovered. The bone was cut off ½ inch or

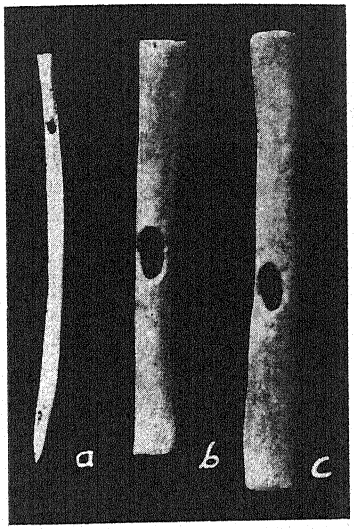

Plate XX.—*a*, Bone awl or needle of rabbit radius; *b*, and *c*, bone whistles.

less from the distal end, so that the shaft of the tool includes the natural curve of the radius, which begins near the distal end. The cut end was then ground to a point revealing the hollow interior of the bone. In one example of this type a small hole occurs in the shaft about ¾ inch from the end opposite the point (Plate XX, a).

Awls of the third class represent the crudest form of bone tool found at King's Ruin. They are simply splinters of bone of irregular shape and various length sharpened at one end, leaving the sharp edges of the shaft of the tool unsmoothed. They range in length from 2¾ to 4 inches.

Pottery Smoother

Besides the awls only one other type of bone tool was found. This consists of a flat piece of the rib of some large animal. It is 3¼ inches long and 1 inch wide, rounded at the ends and worked down on either long side to a blunt edge. The tool is curved and seems to have been well adapted for use as a pottery smoother. The convex curved edge shows some wear.

Tube

A bone tube, 7 inches long and ¾ inch in greatest diameter, shows the best workmanship of any bone object except one or two of the awls. It seems to have been cut from the long bone of some large animal. One end is open; the articular end is closed. The closed end as well as the shaft has been worked and smoothed to a good surface.

Whistles

Several whistles were found (Plate XX, b and c), three on the floor of Room 5 of the pueblo and several with various burials. They were made of the bones of some small mammal. Not enough of the characteristic parts of the bones has been retained to make identification possible. They vary in length from 4⅛ to 4¾ inches. Each contains a single hole in the shaft about 1½ inches from one end. In one case the hole is near the larger end. There is no indication that the ends of any of the whistles had been stopped with clay or pitch or any other substance. It is possible to make a shrill note on any of them by holding the thumb over the end nearest the circular hole in the shaft and blowing into the latter.

Pendant

A pendant was found made of the metapodial of a rabbit—the only bone ornament found in the excavation. The bone, 2 inches long, was entirely unworked except for a perforation in the proximal end, by which it had probably been suspended as a pendant.

Horn Objects

A great many points of the horns of deer were found in the excavation. The majority of these show no evidence of working or use. One, however, a curved point about 4½ inches long, had been worked at the small end to a blunt, square edge about ¼ inch wide.

Another object of horn, 1¾ inches long and 1⅛ inches in diameter, consists of the base of a deer antler which had been hollowed out and the exterior shaped so that it closely resembles the distal end of a human fibula. It had possibly been used as a base for prayer sticks.

ORNAMENTS

The manufacture of ornaments at King's Ruin reached perhaps the highest development of any of the arts which prevailed there. Stone, shell, and perishable materials, such as wood, were used. The forms of ornaments were beads, pendants, bracelets, armbands, mosaic pieces, and carved stone figures.

Shell

The shells of nine different genera of mollusks were in use at King's Ruin. Seven of these are gastropods: Conus, Pyramidula, Olivella, abalone, Oliva, Nassa (Alectrion), and Bursa (?). Two are pelecypods: Cardium and Pectunculus. In point of numbers, Olivella and Conus shells are most important of those found in the excavation. Pectunculus and Alectrion come next in frequency of occurrence. Only two portions of Oliva shells and one portion of abalone shell were found. A single unworked large Bursa (?) came to light.

Beads

Beads were made of Olivella, Alectrion, Pyramidula, and Conus shells. Of these the most frequent in occurrence were the Olivellas. Two forms were in use, one having only the spire ground off, the other with both the spire and a portion of the aperture ground away. A 32-inch string of the latter type was found with a burial in the cemetery (Plate XXI, a). Fifty-one unworked Olivellas were found on the floor of Room 5 of the pueblo, and a few others, unworked, were found in other rooms and here and there in the debris about the pueblo. Twelve Olivella beads were found among the unworked ones in Room 5, and forty others were found scattered in the debris.

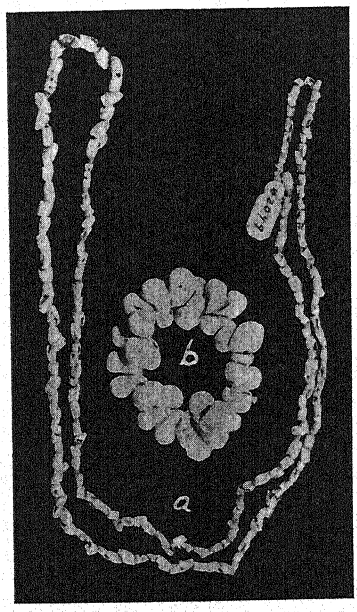

Plate XXI.—Shell beads; *a*, Olivella, *b*, Pyramidula Strigosa.

A string of 292 Alectrion beads (Plate XXII) was found with a burial, and twenty-three were uncovered on the floor of Room 5. The hole for stringing was produced by grinding the shell near the margin of the aper-

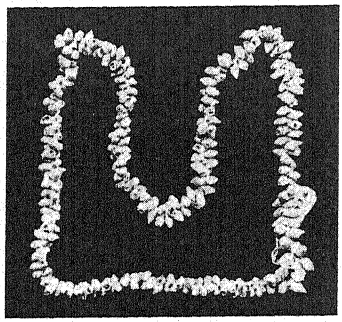

Plate XXII.—Alectrion beads.

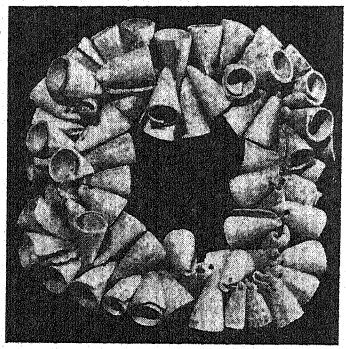

Plate XXIII.—Conus shell beads.

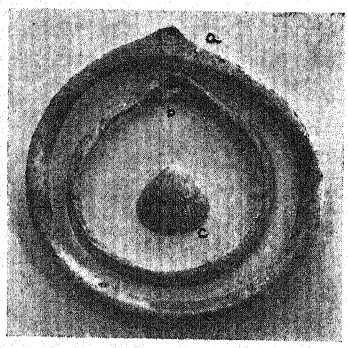

Plate XXIV.—Pectunculus bracelet and pendants.

ture until it was worn through. Many show a flattened, ground surface about the hole thus made.

Thirty Pyramidula shells were found with a burial (Plate XXI, b). The hole for stringing was made in a manner similar to that for the Alectrion.

A few Conus shells were found with the spires completely cut off and with no other sign of working. But sixty-six were found together near the ankles of a burial, which, in addition to having the spires cut off, had also been ground through near the anterior margin of the aperture. They had been strung together through the holes in the apertures (Plate XXIII).

Pendants

Pendants were made from Conus, Oliva, abalone, and Pectunculus shells. Three Oliva shells with holes in the margins of the aperture were found.

The single abalone pendant which was encountered was made from a flake split off from the iridescent interior of the shell. It was ¾ inch long and ⅜ inch wide at its widest part. It was drilled at its widest end.

Three types of Pectunculus pendants were found. The

simplest of these consists of a shell unmodified except for a perforation at the beak (Plate XXIV, c). In the second type the whole top of the shell has been ground away, leaving only the outer margin. The perforation for suspension is at the beak (Plate XXIV, b). A third type consists of a portion of the outer margin of the shell, perforated at one end.

Bracelets

All bracelets found were made from Pectunculus shells. Three different types may be distinguished: plain, undecorated; decorated with incised lines; decorated with triangles carved partially in the round and partially in relief. The first of these types is represented by nine specimens, varying from 1⅞ to 2¾ inches in diameter, and numerous fragments (Plate XXIV, a). In cross section they are usually flat on the upper and lower surfaces and slightly convex on the interior and exterior surfaces.

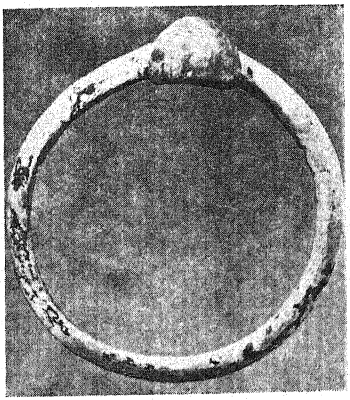

Plate XXV.—Carved Pectunculus bracelet.

Only one fragment of an incised bracelet was found. The decoration consists of pairs of lines, each line of a pair inclined toward the other.

With one burial was found a bracelet 3½ inches in diameter with a triangle carved at the beak (Plate XXV). The triangle is 1 inch on a side.

Bases for Mosaic

The other use of shell in the manufacture of ornaments at King's Ruin was that of a base for turquoise inlay. These are described below.

Stone

Stone ornaments were made from turquoise, argillite, obsidian, and brown and black shale.

Turquoise in various forms, worked and unworked, was abundant at the site. Beads, pendants, and mosaics of this stone were relatively common. Pendants of turquoise were found in place in the burials where they had been affixed to strings about the necks or had been used as ear ornaments. Three mosaic pieces with turquoise inlays were found in burials. Several pendants of turquoise were found on the floors of rooms, and a half dozen were found on the surface of the site. Many small pieces of turquoise inlay were found on the floors of rooms and scattered through the debris in the burial ground. In addition, a great many pieces of unworked turquoise came to light at various points in the excavation. Many grades of various colors and various degrees of purity were in use. Evidently the people of King's Ruin were in close contact with some source of turquoise, or we should not have found such an abundance or so many different grades.

Beads

A 16-inch string of turquoise beads was found with a burial. Enough odd beads to make a 12-inch string were unearthed in the excavation. All the turquoise beads are of the flat variety, averaging 1/8 inch in diameter and 1/16 inch in thickness.

Interred with one of the most elaborate burials was a string of very small black shale and red argillite beads. It is 36 inches long and contains 1,114 beads which average about 1/16 inch in diameter. The beads were arranged with about forty black ones to every two red.

With the burial just mentioned was found also a 66-inch string of red stone beads. The total number of beads in this necklace is 2,031. They average about 3/32 inch in diameter and 1/32 to 1/16 in thickness.

A single large argillite bead was found with another burial. It had beveled surfaces and was about 1/4 inch in both diameter and thickness.

Pendants

Pendants were made of turquoise and red argillite. The turquoise pendants are nineteen in number, varying greatly

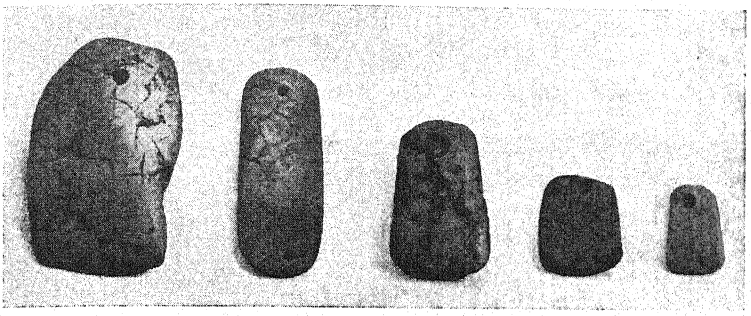

Plate XXVI.—Turquoise pendants.

in size and excellence of finish. In size they vary from 1¼ inches by ⅞ inch to 7/16 by 5/16 inch (Plate XXVI).

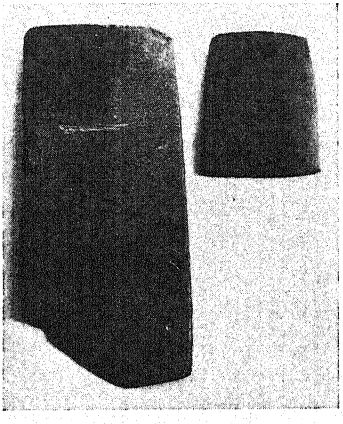

Plate XXVII.—Argillite pendants.

Three argillite pendants were found, two of which are shown in Plate XXVII. The largest is 1⅛ by 2⅝ inches.

Tinklers

Some pieces of obsidian were found with a child burial outside the west wall of the pueblo. These were thirteen in number, varying in length from 1¾ to 2½ inches and in thickness from ⅜ to ¼ inch. They are irregular in shape, and the sharp edges had been worked to rounded corners. Our guess is that they served to amuse some baby and were strung along the edge of the head cover of his cradle. When shaken they make a pleasing tinkling sound. They were found in a row in the grave, all parallel with one another as though they might have been tied together on a string.

Mosaics

The best work in stone ornaments at King's Ruin is represented by the turquoise mosaics. Three of these were found with three different burials in a condition of sufficient preservation to determine their original form. With Burial 34

Plate XXVIII.—Stone frog used as a base for turquoise mosaic.

was a frog, 1½ inches long, carved of brown pumice stone, with legs and head carefully indicated (Plate XXVIII). Under the head a small loop had been carved out so that the frog could be suspended. Many tiny rectangular bits of turquoise were found with this ornament, some with traces of black pitch still adhering to them. Evidently the pieces had been laid in pitch on the back of the frog.

With another burial was found a second mosaic frog. This has as a base a Pectunculus shell 2 inches long. The shell itself is unmodified except for a perforation at the beak. Turquoise inlay covers the whole back of the shell except for areas at the front and back ends where pitch was applied but no turquoise put on. The strips of black represent the space between the legs and body of the frog (Plate XXIX). There is a centerpiece of pinkish stone in the inlay.

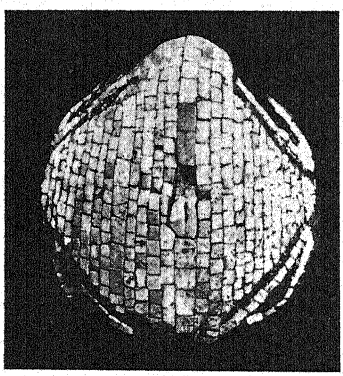

Plate XXIX.—Mosaic frog on shell base.

The third piece of turquoise mosaic was found in fragmentary form, but there were sufficient pieces in their original form to indicate its nature. Plate XXX shows it in restoration.

Another stone object which should be mentioned here is a very neatly shaped, highly polished disc of greenish mottled calcite, ¾ inch in diameter and ⅜ inch thick. The suggestion is made that it was the centerpiece for a mosaic.

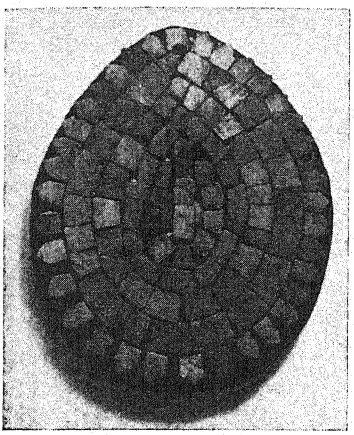

Plate XXX.—Turquoise mosaic pendant (restored).

Paints

Mention should also be made here of the minerals used in painting wooden and other perishable objects and also perhaps in painting the human face and body.

Of these, three different kinds were found. There were many pieces of hematite in the pueblo and in the burial ground, as well as several portions of powered azurite with burials and in the pueblo. A few pieces of malachite and chalcopyrite also were brought to light.

Hematite, from which red paint was made, was found in hard chunks of varying sizes. Many of the pieces show evidence of having been rubbed and scraped in the process of rubbing off the powder from which the paint was made. One small mortar found in the excavation shows traces of red paint in its concavity, indicating that the pieces of hematite were sometimes ground up in such mortars.

The source of the blue paint, azurite, was found only in powdered form. It was commonly buried with the dead. One portion of azurite powder was found unconsolidated but in a long sticklike form, as though it had been contained in a reed which had disintegrated. Perhaps this indicates a common method of carrying and keeping the paint powder.

Malachite was used for green paint. A few small pieces were found in rooms 5 and 11; these had been ground to smooth surfaces, indicating that powder had been obtained from them by abrasion. All three of these paints we know were used in the decoration of wooden objects.

Decorated Wooden Objects

Decorated wooden objects were found in three burials. In Burial 3 there were the remains of a stick about 1 inch

in diameter which had been painted with stripes of red, blue, and green. In burials 18 and 37 were found fragments of wood which from their position in the grave seem to have been arm bands. They had been painted blue. The portion from Burial 37 has a background of light gray, over which are four chevrons or zigzags neatly painted in blue.

WEAVING

The evidences for the existence of the art of weaving among the inhabitants of King's Ruin are fragmentary but abundant. Nine of the burials in the cemetery were partially wrapped in matting made of tule or rush grass, the partially disintegrated fragments of which were found. In addition, the imprints of some of the mats were left in the earth filling the graves. All of these remains reveal the same sort of weave—a twilled, over-two-and-under-two weave, using flat strips of rush or tule. No evidence of a selvage or the finishing weave of the matting was found. The abundance of matting which remained in the burials indicates that weaving was not an undeveloped art at King's Ruin.

Only one other fragment of woven material was found—a small piece of a coiled basket which had been buried with a child in the main burial ground. A foundation made of two slender rods had been used. If there was originally any filling material surrounding the foundation rods, it had disintegrated. The foundation had been coiled, and the coils were sewed together with splints of wood.

An imprint of a coarse burlaplike textile was discovered in a burial on the fragment of a painted wooden arm band. The imprint indicates a cloth similar in weave to the coarser cotton textiles of the Late Pueblo Period elsewhere in the Southwest.

AGRICULTURE

The evidences for agriculture at King's Ruin consist mainly in the stone implements found in the excavation. The presence of large, well-made metates, numerous manos, and many digging tools indicates an extensive practice of agri-

culture. No charred grain was found in any of the rooms of the pueblo, probably because the pueblo had not burned at the time of abandonment. However, two charred corn cobs were found. These were fragmentary and do not indicate completely the size of the ears raised at the site. A sufficient portion of each was preserved, however, to show that they had eight rows of kernels and were ⅜ inch in greatest diameter. These charred corncobs, together with the metates and manos, are evidence that corn was an item in the diet of the people of the pueblo. In addition, some charred remains of piñon nuts were found under a broken bowl on the floor of Room 6 and indicate another source of food supply.

BURIALS

A total of fifty-five burials was uncovered in the excavation. One of these was the child burial found under the floor of the pit house under the pueblo. Of the remaining fifty-four burials six were double and three triple, making a total of sixty-six individuals whose remains were found. All of these burials except those of three children and one adult were found in the flat ground east of the pueblo. The large extent of the burial ground is shown on the map (Fig. 3). It extended from near the southwestern corner of the pueblo to

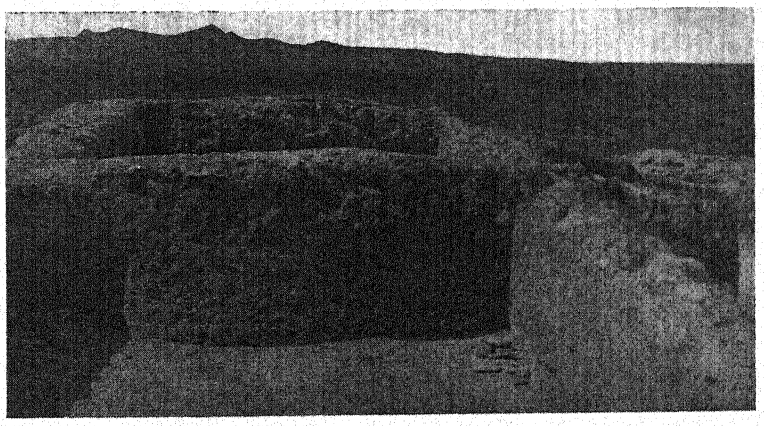

Plate XXXI.—Burial ground, King's Ruin.

a point about 150 feet east of the northeast corner of the pueblo. The area in which the burials occurred was not a rubbish heap. In many instances the graves had been dug not only through the softer surface soil, but also from 1 to 3 feet into the hard clay below. The depth of the graves below the present ground level varies from 1 foot to 5 feet 5 inches and averages about 3 feet 6 inches.

Orientation

Bodies were extended, lying on their backs (Plate XXXII). In all but two of the graves in the burial ground the orientation was approximately east and west, with head to the east. The two exceptions to this rule were oriented with their heads roughly to the southwest. In three or four instances the knees were very slightly flexed, but in such cases, as in the other burials, the skeleton lay on its back.

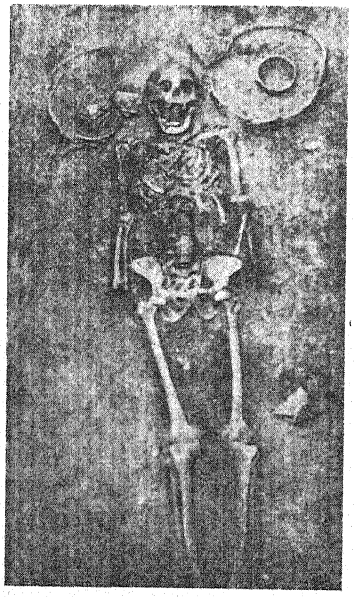

Plate XXXII.—A typical burial.

In the three triple burials and in five of the six double burials the bodies lay side by side. In one of the double burials the bodies lay one over the other with about 10 inches of earth between, but from the nature of earth surrounding them it appeared that both burials were made at the same time.

Burial Wrappings

Nine of the burials had either rested on or had been partially wrapped in a twilled matting. Pieces of the matting were found under the skulls and upper portions of the bodies or still adhering to the upper surface of the bones.

Grave Coverings

Seven of the graves had been roofed with small poles from 1 to 2 inches in diameter. In six of these the poles had extended across the grave, and in one the poles had apparently been lengthwise of the grave. The poles were well preserved in the triple burial, Number 20. The greatest width of this burial was 40 inches. Across the pelvic region of the bodies and over the skulls had been placed at regular intervals eleven poles about 2 inches in diameter, with their ends embedded in the hard clay walls of the grave. The poles were about 6 inches above the bodies. Some of the pottery offerings had apparently been placed on the poles at the time of burial, for the broken pieces of the vessels were found at the level of the poles and resting upon them. Many of the other burials had perhaps also been roofed with poles in this manner, for a good deal of decayed wood was found associated with many of them.

Face Painting

The lower jaws and facial bones in eight of the burials were found colored green, probably with copper carbonate. Only the lower and upper jaws and the lower parts of the orbits were found so affected. The irregular outlines of the colored areas on the bones and the thinness of the pigment indicate that the color was not applied directly to the bones. Either the face had been painted with the green paint at the time of burial and the mineral pigment had penetrated to the bones after the decay of the flesh, or a colored cloth or some other colored article had been placed on the face and the color transferred to the facial bones after burial.

Offerings

Many types of offering were found with the burials, but the most general type was pottery. Only three of the burials in the cemetery had no pottery offerings. Two of these were the burials mentioned above as departing from the usual mode of orientation, lying with heads to the southwest. These were not only without pottery but also lacked any other sort of offering.

The other burials contained from one to six pieces of pottery. The more usual number was two or three. Except in a very few instances these were bowls decorated in black-on-gray or black-on-brown. Three small ollas and one larger olla, described above, were found with four different burials, but in these cases bowls were also found as offerings. There was no conclusive evidence that bowls had been intentionally "killed"—no bowls were found with small holes in them. It may have been that some of the bowls were intentionally broken into sherds at the time of burial. In only eight instances were pottery vessels found below the hips. In far the majority of burials the vessels had been placed on either side of the head or near the shoulders (Plate XXXII). Intrusive pottery was found with ten of the burials and was in association with black-on-gray vessels in every case.

Other offerings consisted of personal ornaments, tools, weapons, and fetishes. Most of such offerings have been described above. It is necessary here to mention only their mode of occurrence. The ornaments were generally in the position in which they had been placed on the body—bead necklaces, bracelets, and ear pendants occurring in the region of the neck, arms, and head, respectively. In three instances stone, Conus and Olivella beads were found near the ankles. In eight cases powdered azurite, presumably for body and face painting, was found in a small bowl near the head of the burial. Other offerings were placed in various positions along the body from the legs to the head. Arrowheads, as many as ten with one burial, indicate the placing of sheaves of arrows with the dead. Ten graves contained arrowheads; the skeletons appeared to be those of males. Males and females alike were buried with personal ornaments. Flint knives, stone axes, and bone awls occurred in a few burials and in various positions in the graves.

The most elaborate of the burials was the one marked "e" in the diagram of the burial ground (Fig. 3). It contained the turquoise mosaic frog with shell base, described above, the 292 Alectrion beads, the 3-foot string of small black and red beads, two glycimeris shell bracelets, the 66-inch string of red stone beads, in addition to three black-on-gray bowls.

Child Burials

Child burials were distinguished from adult burials in no way except by the presence in two of them of toy clay vessels and in three instances by their location. Two were found just outside the west wall of the pueblo, oriented approximately north and south; that is, parallel to the wall of the pueblo. One was found under the north end of the floor of Room 1 of the pueblo, oriented with head to the east. That it was not the invariable custom, however, to bury children within the pueblo or close to the pueblo walls is shown by the fact that five child burials were uncovered in various places in the burial ground to the east. One of the latter showed green coloration on the lower jaw in the manner of some of the adult burials.

SKELETAL MATERIAL

The skeletal material itself was generally in a bad state of preservation. Excepting the single burial associated with the early period, the skeletal material represents thirteen children, six adolescents (under twenty), twenty adult males, and eleven adult females, insofar as age and sex could be determined. No determination of sex was possible on sixteen of the individuals uncovered. Measurements and more detailed observations were made on only thirteen individuals. In no case is it possible to make a series of any one measurement that admits of any value as an average.

Deformation

Only one generalization can be made from the analysis of the skeletal material, and that is that head deformation was practiced. Three crania show evidence of pronounced preburial deformation of the occipital region. Three others show some indication of deformation, but the crania were so damaged that certainty is impossible.

CULTURAL AFFILIATIONS

The culture represented at King's Ruin was unquestionably a part of the great pueblo cultural complex which we find manifested in prehistoric times along the San Juan,

Little Colorado, Rio Grande, Mimbres, and Gila rivers. All the general earmarks of that complex are present: agriculture with cultivation of corn, early house structures with floors below the level of the ground, later compact pueblos of masonry, extensive development of pottery with the typical bowl and olla forms, coiled and twilled weaving, metates and manos, pecked-stone axes of full-round and three-quarter groove, typical bone implements, carved shell ornaments, stone mosaic, and occipital deformation of the skull. The pueblo traits, however, show certain local specializations at King's Ruin and also certain affinities with some of the southern and northern pueblo centers.

So far as we know at present, the architecture of the Early Pueblo Period at King's Ruin has no exact counterpart in early pueblo[26] architecture anywhere else in the Southwest.

The vestibule of the early Hohokam houses is absent in the King's Ruin structures. Moreover, the side walls of the Hohokam dwellings were nearly vertical and leaned not against a central ridgepole, but against the edge of a very slightly ridged roof.[27] The Roosevelt houses were excavated more deeply below the ground level. The shallowness of King's Ruin dwellings suggests the low-lipped structures uncovered at the Grewe site,[28] which were also oval in shape. But here the analogy stops. No central support posts were found in the Grewe site houses and vestibules were present.

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[26] "Early Pueblo Period" as used here follows the classification of southwestern culture as defined by Dr. Bryon Cummings of the University of Arizona. According to Dr. Cummings the culture of the prehistoric Southwest in any particular region may be classified chronologically into three periods, based on house types in use during the period. Thus in the San Juan drainage, there was the Cave Period when natural shelters were used, the Early Pueblo Period when pit houses (structures with floor levels below the surface of the ground) were used, and finally the Late Pueblo Period when above-ground houses of masonry were built. This classification must not yet be taken as having the exact and clear-cut time connotations that many are trying to work out for the Pecos Classification. It refers simply to the cultural level, as indicated in house types, that any group of people in any particular area in the Southwest had attained.

[27] Haury, 1932.

[28] Woodward, 1931.

The persistence of the vestibule in the early pueblo structures in the Hohokam region stamps it as a fundamental feature in early Hohokam culture. Its absence seems to indicate a people not under the sway of that cultural complex.

Geographically, the early pueblo structures nearest to King's Ruin, so far uncovered, are those in the region of Flagstaff.[29] The Flagstaff pit houses and earth lodges have the vestibule as a characteristic feature. None of them has the hip-roof type of superstructure indicated at King's Ruin. There is thus no relationship apparent here.

The combination of hip roof, simple oval floor plan, and shallow 5-inch lip has not thus far been reported from any region of the Southwest. It seems, therefore, that the people of the Early Pueblo Period at King's Ruin developed their own type of dwelling without any strong influences from other parts of the pueblo area. Characteristically, they developed a very simple form of dwelling.

Architectural development can never be completely dissociated from environment. Whatever may be the character of architectural ideas influencing a people, the expression of the ideas is limited by environmental resources. A case in point is the difference in materials of construction and its effect on house forms in the northern and southern pueblo areas. In the Big Chino Valley during the Late Pueblo Period, dwellings were made in a manner that is common to the whole Southwest; that is, they consisted of a series of rooms one or more stories in height, built as a single unit, all rooms being contiguous. The masonry involved is similar to that of the Hohokam region, consisting mainly of adobe clay; but the use of adobe can be considered a reflection of environment rather than an indication of cultural affinity with the Hohokam people. The architectural plan of the pueblo at King's Ruin has a strong resemblance to the so-called unit type of dwelling found commonly in the earlier remains of the San Juan drainage and also in the region of Flagstaff. But whereas a kiva is ordinarily found associated with such remains in the northern country, no kiva was found at King's Ruin. The lack of kiva and the possible presence of a cere-

[29] Hargrave, 1930. Colton, 1931.

monial room within the pueblo suggest southern affiliations. On the other hand, a common but not universal feature of southern villages is the enclosing compound wall. No evidence of such a wall was found at King's Ruin.

It seems useless to look for any close affiliations with any other region in the late pueblo architecture of King's Ruin. The salient fact of the presence of the general pueblo building complex alone stands out. The use of stone in combination with the adobe of the walls may indicate a people which was familiar only with the stone masonry of the north and unwilling, therefore, to trust to adobe alone, although the resources of the environment dictated the use of that material. The absence of the special features of north and south—kiva and compound—indicates a relative independence in the developments in the Big Chino Valley.

The pottery of King's Ruin has an undeniable similarity to the pottery of the Hohokam country. The paste has a strong resemblance to that in use in red-on-buff and in the plain wares of the middle Gila region. This, however, may be a result of environmental necessity. The relatively large proportion of plain to decorated wares is a feature common to both red-on-buff sites and King's Ruin. In decoration there are features similar to that on early red-on-buff, e.g., the repetition of isolated elements, such as crosses, over a whole vessel surface. But in the main, the resemblances of Prescott pottery to that of the north far overbalance the resemblances to Hohokam pottery. If we could find evidence that the earlier pieces of black-on-gray have the strongest resemblance to red-on-buff, we should be content to believe that the pottery art at King's Ruin was inspired by early contacts with the south. But the design in pendant triangles on the early black-on-gray piece is one that has no similarity to anything produced in red-on-buff. It has, on the other hand, many counterparts in pottery recovered from early pueblo ruins in northeastern Arizona and southwestern Colorado.[30] Similarly, the affinities of the pottery of the later period are all with the north, insofar as affinities with any region exist.

[30] Roberts, 1930, 1931.

The characteristic deep-bowl shape with straight rims is more nearly duplicated in the Kayenta region of the San Juan than anywhere else. It also occurs in El Paso Polychrome.[31] Deep bowls do occur in the Middle Gila, but with slightly outturned rims. Designs for the most part suggest the north rather than the south. The quadrate design, the rim pendant designs, the band on bowl interiors, and the connected, repeated-element design are characteristic of Early and Late Pueblo Period pottery of the San Juan and Flagstaff regions, as well as the black-on-white pottery of eastern Arizona.

The chief specialization in design which is characteristic of King's Ruin potters is the extensive use of the key. This design element is by no means unknown in other parts of the Southwest. It occurs in triangular form in early Mimbres pottery.[32] It is of occasional occurrence in one-turn triangular form in Roosevelt Black-on-white. In rectangular form it occurs quite commonly on Late Gila Polychrome. And it occurs on earlier black-on-white from the Kayenta region, as well as on late black-on-white from the Flagstaff region. But in none of these regions is it nearly so popular as in the Prescott region where this design dominates. One of its most characteristic uses, however, seems to have had a source in the later black-on-white of the Flagstaff region. The characteristic use referred to is as a repeated element over the whole interior of a bowl or throughout a very wide band covering most of the interior. This use seems very likely to have been inspired by the allover designs of Flagstaff Black-on-white, in which not the individual key but the interlocked key was used. One such black-on-white bowl was found in a burial at King's Ruin (Plate XII, a). The effect of the design on this bowl is very similar to that of the black-on-gray key in its characteristic use.

Another characteristic decoration in King's Ruin pottery is the use of large dots, sometimes enclosed in groups in a broad line and repeated over the surface of a bowl. The use of dots is a characteristic pueblo trait. The earliest designs

[31] Stallings, 1931.

[32] Bradfield, 1930, Pl. XXXIV.

in black-on-white are characterized by the extensive use of dots, both isolated and pendant from lines or triangles. Later black-on-white—for example, Deadman's Black-on-white in the Flagstaff region—is also characterized by common use of large and small dots. Ancient Hopi ware makes frequent use of spatter drops, often in the manner employed at King's Ruin. But the use of groups of large dots enclosed by a line in oval or other areas (Plate IX) seems rather distinctive of Prescott ware. In the light of further excavation it will be interesting to determine to what extent this form of decoration influenced the development of the pottery of the Yuman-speaking tribes to the west. A similar use of dots is very characteristic of modern Mohave pottery. Mr. Gladwin found black-on-gray in association with Yuman or Mohave pottery at sites in extreme western Arizona, mainly in the region of Big Sandy River, a tributary of the Bill Williams.[33] Possibly there is here represented a historic survival of prehistoric black-on-gray influence.

If we are right in assigning the full-round groove stone ax and maul to the Early Pueblo Period at King's Ruin, this would indicate earlier influence from the north, specifically from the San Juan drainage. The later ax type, with three-quarter groove, indicates the adoption of the form which seems to have had its origin in the southern part of the pueblo region and which subsequently spread as far north as Flagstaff. In general, the King's Ruin people were acquainted with all the stone tool forms common to the pueblo area and did not produce any specialized types. The schist palette indicates contact with the south.

Turquoise mosaic is an art common to the whole Southwest. It was practiced in both the north and the south, and reached one of its highest points of development at Pueblo Bonito in the Chaco Canyon.[34] The considerable development of the art at King's Ruin may indicate merely the proximity of the region to some local source of turquoise. The general abundance of turquoise at the site seems to bear this out. The prominent use of the frog indicates a sharing of

[33] Gladwin, 1930 (a).

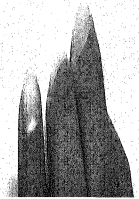
[34] Pepper, 1909.

the general religious concepts of the pueblo area on the part of the King's Ruin people.

Shell carving was well developed at King's Ruin. This seems to be a more common trait of the southern pueblo region than of the northern. Proximity to the source of supply—the Gulf of California—may account for the development both in the Hohokam and Prescott regions.

We should expect the earlier affiliations of a people to be preserved longest in burial customs. Being connected with the fundamental religious beliefs of a people, they should be subject to the least rapid change. At King's Ruin we find the extended inhumation. In southern Arizona cremation was the general practice. In the San Juan and adjacent regions, the flexed inhumation was the common form. To the immediate east and northeast of the Big Chino Valley—namely, in the Tonto Basin and at Turkey Hill, near Flagstaff—extended inhumation was practiced, and frequently, as at King's Ruin, it was customary to place small poles over the grave. From neither of these regions is a green or blue color on the skull reported. The absence of cremation indicates a lack of the basic religious ideas of the south, and a lack of flexure indicates a lack of the ideas common to the San Juan drainage. But evidently Prescott culture was actuated by some of the ideas of the people of the cultures to the east and north.

From this survey of the relationships traceable in the King's Ruin culture, two important facts seem to emerge: First, the culture is a fairly distinct entity and cannot be assigned to either the northern black-on-white center or the southern red-on-buff center. Traits common to both occur in it, but the complete complex of traits of neither is present, and the local developments are sufficiently individual to give it a separate place in southwestern prehistory. Second, those influences which were at work in the culture came dominantly from the north rather than from the south. The intrusive pottery, described above, corroborates this conclusion and indicates the long and continuous nature of this northern contact.



SUMMARY

The prehistoric culture represented by the remains from King's Ruin falls into two distinct phases. The early phase, preceding A.D. 1026, was characterized by oval, single-room dwellings with floors 4 or 5 inches below the ground level. The superstructure was of gable or hip-roof type. A crude gray pottery decorated in black was made.

Following this phase and beginning about A.D. 1026, the type of dwelling was a small pueblo with contiguous rooms of adobe and river-boulder masonry. Distinctive culture traits of this late period were:

A. Ceramics
   1. High proportion of plain gray pottery tempered with crushed granite.
   2. Prescott Black-on-gray and derived decorated wares.
   3. Interior decoration of ollas.
   4. Absence of corrugated wares.

B. Stonework
   1. Three-quarter-grooved axes and mauls, usually unpolished.
   2. Open-end, trough metates.
   3. Single surface, plano-convex manos.
   4. Straight- and concave-base arrowheads without notches.

C. Ornaments
   1. Extensive use of turquoise mosaic with shell or stone base—frog likenesses, a characteristic form.
   2. Carved shell.

D. Burials
   1. Extended inhumations.
   2. Double and triple burials.
   3. Pole-covered burials.
   4. Bodies wrapped in twilled matting.
   5. Use of green and blue face paints prior to burial.

Having the general characteristics of the prehistoric pueblo cultural complex, the culture at King's Ruin represents an

underdeveloped phase thereof. It was characterized by crudity in stone- and bonework and most notably in pottery. This crudity was a persistent trait and showed no signs of change up to at least A.D. 1200. This was true despite a constant contact with pueblo people to the north and east, from the period preceding A.D. 1026 through to 1200.

SOURCES OF INFORMATION

The principal sources of information on which the above study of King's Ruin is based are as follows:

Field notes and field lectures of Dr. Byron Cummings, Tucson, Arizona

Field notes of J. W. Simmons, Prescott, Arizona

Field notes of John H. Provinse, Tucson, Arizona

Field notes of the writer

The Arizona State Museum and Smoki Museum collections from King's Ruin

The notes and museum collections are a product of the Arizona State Museum-Prescott Chamber of Commerce Expedition of June-July, 1932.

LITERATURE CITED

Bradfield, Wesley

1931.—Cameron Creek Village. Santa Fe, New Mexico.

Colton, Harold S.

1931.—A survey of prehistoric sites in the region of Flagstaff, Arizona. Bulletin 104, Bureau of American Ethnology, Washington.

Fewkes, J. Walter

1898.—Archaeological expedition to Arizona in 1895. Seventeenth Annual Report, Bureau of American Ethnology, Part II, Washington.

1907.—Antiquities of the upper Verde River and Walnut Creek valleys. Twenty-eighth Annual Report, Bureau of American Ethnology, Washington.

Gifford, E. W.

1928.—Pottery-making in the Southwest. University of California Publications in American Archaeology and Ethnology, Vol. 23, No. 8, pp. 353-373, University of California Press, Berkeley, California, May 26.

Gladwin, Harold S.

1930.—(a) The western range of the Red-on-buff culture. The Medallion, Gila Pueblo, Globe, Arizona.

1930.—(b) An archaeological survey of Verde Valley. The Medallion, Gila Pueblo, Globe, Arizona.

1930.—(c) Some southwestern pottery types, Series 1. The Medallion, Gila Pueblo, Globe, Arizona.

Guthe, Carl E.

1925.—Pueblo pottery making, a study at the village of San Ildefonso. Phillips Academy, Andover, Massachusetts, Yale University Press.

Hargrave, Lyndon L.

1930.—Prehistoric earth lodges of the San Francisco Mountains. Museum notes, Vol. 3, No. 5, Museum of Northern Arizona, Flagstaff, Arizona, Nov.

1932.—Guide to forty pottery types of the Hopi country and the San Francisco Mountains, Arizona. Bulletin 1, Museum of Northern Arizona, Flagstaff, Arizona, April 15.

Haury, Emil W.

1932.—Roosevelt: 9:6, A Hohokam site of the Colonial Period. The Medallion, Gila Pueblo, Globe, Arizona.

Hawley, Florence M.

1929.—Prehistoric pottery pigments in the Southwest. American Anthropologist, n.s., Vol. 31, No. 4, pp. 731-754. Lancaster, Pa., October-December.

Kidder, Alfred Vincent

1924.—An introduction to the study of southwestern archaeology. Phillips Academy, Andover, Massachusetts, Yale University Press.

1932.—The artifacts of Pecos. Phillips Academy, Andover, Massachusetts, Yale University Press.

Mindeleff, Cosmos

1896.—Aboriginal remains in Verde Valley, Arizona. Thirteenth Annual Report, Bureau of American Ethnology, Washington.

Pepper, G. H.

1909.—The exploration of a burial room in Pueblo Bonito, New Mexico. Putnam Anniversary Volume, pp. 196-252. New York.

Roberts, Frank H. H.

1929.—Shabik-eshchee village, A late Basket Maker site in the Chaco Canyon, New Mexico. Bulletin 92, Bureau of American Ethnology, Washington.

1930.—Early Pueblo ruins in the Piedra district, southwestern Colorado. Bulletin 96, Bureau of American Ethnology, Washington.

1931.—The ruins at Kiatuthlanna, eastern Arizona. Bulletin 100, Bureau of American Ethnology, Washington.

Stallings, W. S., Jr.

1931.—El Paso Polychrome. Technical Series, Bulletin No. 3, Archaeological Survey, Laboratory of Anthropology, Inc., Santa Fe, New Mexico, December.

Woodward, Arthur

1931.—The Grewe site. Los Angeles Museum of History, Science and Art, Occasional Papers, No. 1, Los Angeles, California.

PART II
FITZMAURICE RUIN

By Louis R. Caywood

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INTRODUCTION

After the excavation of King's Ruin, in the summer of 1932, by the Arizona State Museum and the Yavapai County Chamber of Commerce expedition, it was seen that great possibilities awaited future workers in the black-on-gray region around Prescott, so in the spring of 1933 Dr. Byron Cummings thought it advisable to send another expedition into the field and to choose a site close to Prescott to work out further details of the culture. The Fitzmaurice Ruin was chosen because of its proximity to Prescott, because it is one of the largest ruins near Prescott, and because it lies near the periphery of the black-on-gray region as well as in a different drainage area from King's Ruin—namely, the Agua Fria drainage. King's Ruin lies in the upper Verde drainage area.

Although at the time of this writing the Fitzmaurice Ruin is only partly excavated, it deserves a preliminary report to bring to the student such information as has been gleaned from the excavation of a few of its rooms and the finding of a number of burials.

The ruin consists of a compact mesa pueblo of more than thirty rooms situated on the top of a high, steep-sided hill. Around three sides of the hill are found outlying rooms numbering over twenty, which brings the total ground-floor rooms of the pueblo to more than fifty.

At the beginning of the season, on June 5, 1933, permission was obtained from G. S. Fitzmaurice to excavate in the ruin which is located on his land. Work was begun under the personal direction of Dr. Byron Cummings and under the auspices of the Archaeological Committee of the Yavapai County Chamber of Commerce.

Dr. Cummings outlined the plan of work and left the details to be worked out by E. H. Spicer, Frank Keller, Jr., and the author. Frank Keller, Jr., a student engineer, worked with the party for one month and not only helped in the excavation but also worked out a map of the ruin.

Many general statements which apply to the foregoing report on King's Ruin apply equally well to this preliminary report, which is expressly intended as merely a supplement and not as a separate report. When further excavation is made a final report for the Fitzmaurice Ruin will be made.

The Prescott region is almost virgin territory as far as archaeological excavation is concerned. This neglect by archaeologists may be accounted for, not because of lack of archaeological material or inaccessibility to the ruins, but because of the unpromising returns in the way of artifacts and the lack of such immense ruins as are found elsewhere in the Southwest.

The work at King's Ruin in 1932 was one of the first systematic investigations which has been carried on in the black-on-gray region. As previously mentioned in the foregoing pages, the culture around Prescott is a well-defined, specific local development but shows the general pueblo characteristics found in other parts of the Southwest.

GENERAL

The city of Prescott lies in a basin surrounded for the most part by pine-covered hills and is located on Granite Creek

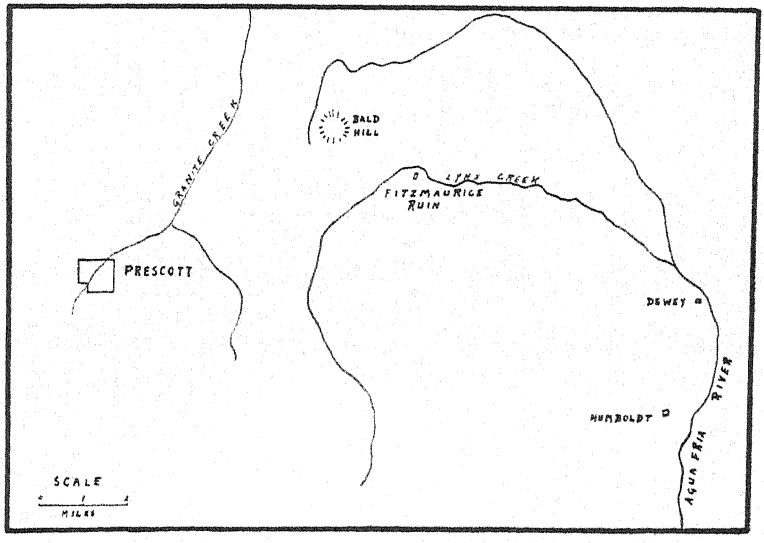

Figure 21.—Map showing the location of Fitzmaurice Ruin.

which flows into the Verde River. It is in a region which was well adapted to a prehistoric, sedentary people. A number of interesting ruins are found in the immediate vicinity of Prescott, and one lies even within the city limits.

These ruins, however, are small, averaging perhaps ten rooms to each group. The largest pueblo in the vicinity of Prescott is the Fitzmaurice Ruin located on Lynx Creek, in the Agua Fria drainage, about 7 miles east of Prescott. It is situated on the south side of the creek on a small, pointed hill and commands a good view of the Jerome Mountains and Lonesome Valley to the north. The hill has very steep sides except for a saddle which connects it to a higher hill toward the southwest (Plate XXXIII).

The geology of the immediate region is important because of its bearing on the inhabitants of the pueblo. Granite outcrops are numerous near the ruin, and it was from these that most of the building material was obtained. Some schists occur, and blocks of these were also used in house construction. In addition these schists and granites were ground up and used for temper in pottery making. About 1½ miles to

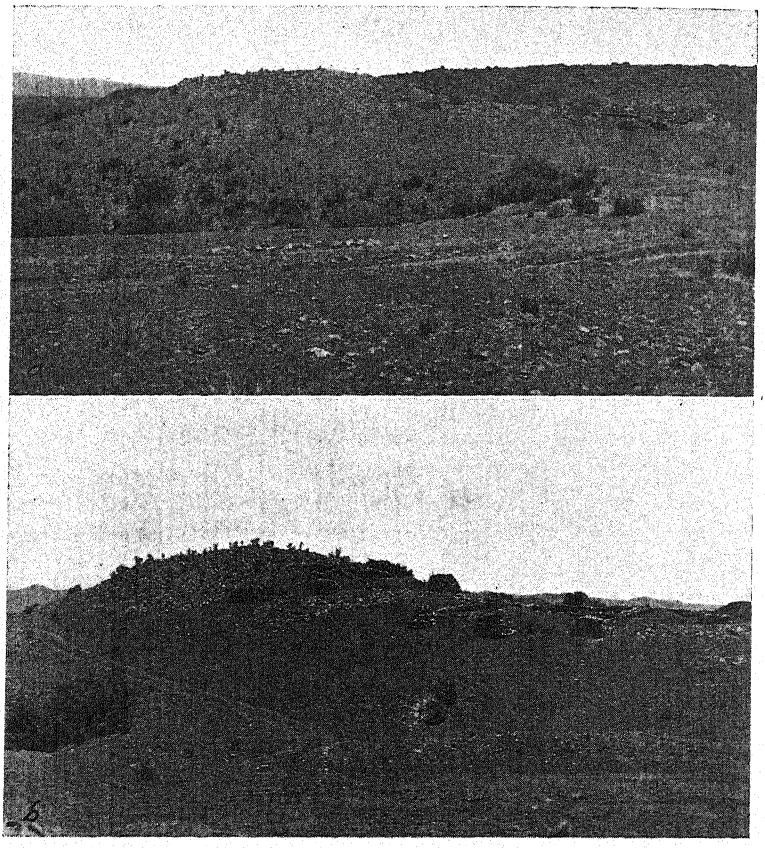

Plate XXXIII.—General views of Fitzmaurice Ruin; *a*, looking toward the east, *b*, looking toward the northeast.

the northwest of the ruin, on the north bank of Lynx Creek, is Bald Hill which is of volcanic origin. It is made up of a series of strata of ash and pumice overlain by a thick capping of basaltic lava. Clays containing ash similar to that found at Bald Hill were used in pottery manufacture by the ancient inhabitants of Fitzmaurice Ruin.

The ruins have been known ever since white men set foot in that region in search of gold. During the gold-rush days on Lynx Creek a house was built on one of the outlying rooms. According to some of the old-timers of the region,

wagon loads of artifacts were carried away from the ruins in early times.

It was not until 1930 and later that any extensive digging was carried on. In 1930 J. W. Simmons dug in the burial ground and recovered a number of decorated bowls and a considerable amount of jewelry from forty-three burials.[35] After his success there was considerable digging in the rooms by other people, and some damage was done to walls and floors.

The work carried on during the summer of 1933 consisted in the exploration of three rubbish heaps for burials and for stratigraphic purposes and the excavation of five rooms—two main pueblo and three outlying rooms.

HOUSE REMAINS

Before excavation the ruin presented a very rocky appearance. The top of the hill was completely covered with large irregular granite boulders and some schist slabs, both of which had been used in wall construction. Very few outlines of rooms could be distinguished from the mass of boulders. Around the north, west, and south sides of the hill, outlines of outlying rooms could be discerned, and on the south side of the hill between the pueblo proper and outlying rooms the remains of a defense wall (Fig. 22) were visible.

Before excavation there were no indications of pit house remains to be seen on the surface. Excavation began with Room 1 and continued in order with rooms 2, 3, and 4. The existence of Room 5 was a complete surprise and was found while trenching. This was the only pit house discovered during the excavation, but others undoubtedly are present.

Pit Houses

Since there are indications that the pit house remains are earlier, Room 5 will be considered first. The period of its occupation, relative to that of the other rooms excavated, has not been definitely determined. The evidence for believing

[35] This collection was bought by H. S. Gladwin and is now in the Gila Pueblo at Globe, Arizona.

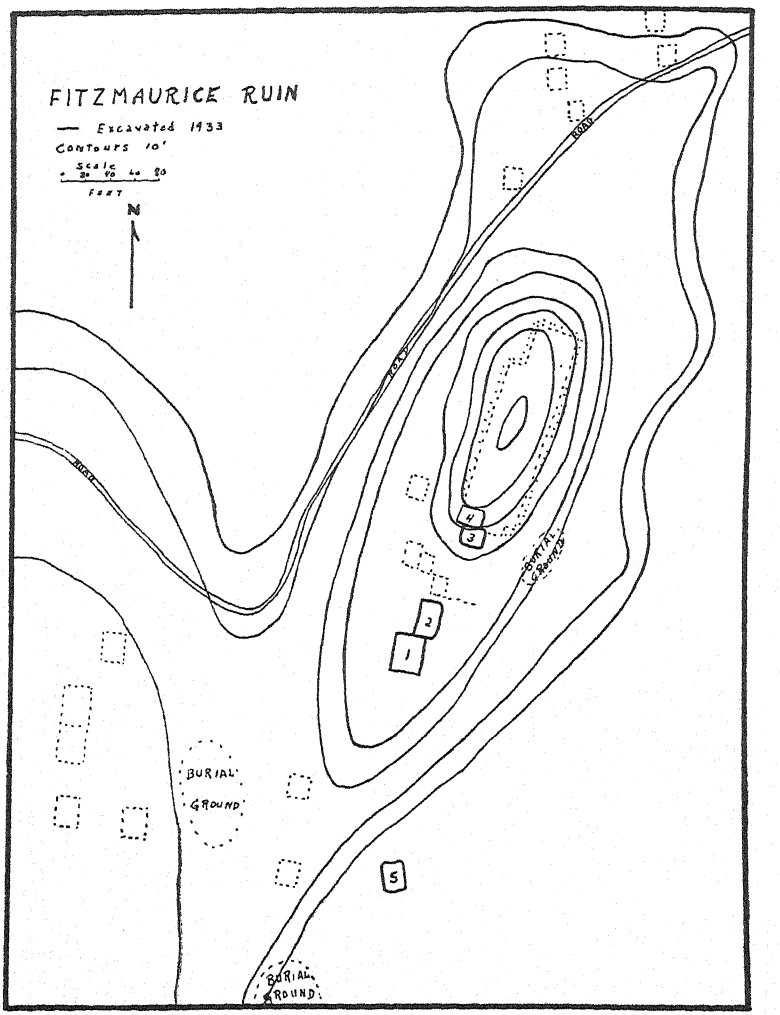

Figure 22.—Pueblo and burial ground, Fitzmaurice Ruin.

it to be earlier is as follows: its form is somewhat similar to that of the early period pit houses at King's Ruin. In addition, although a great deal of pottery was found on its floor, no definitely late types came to light. However, the only decorated pottery types found were Prescott Black-on-gray,

for which no clear period differences have yet been distinguished.

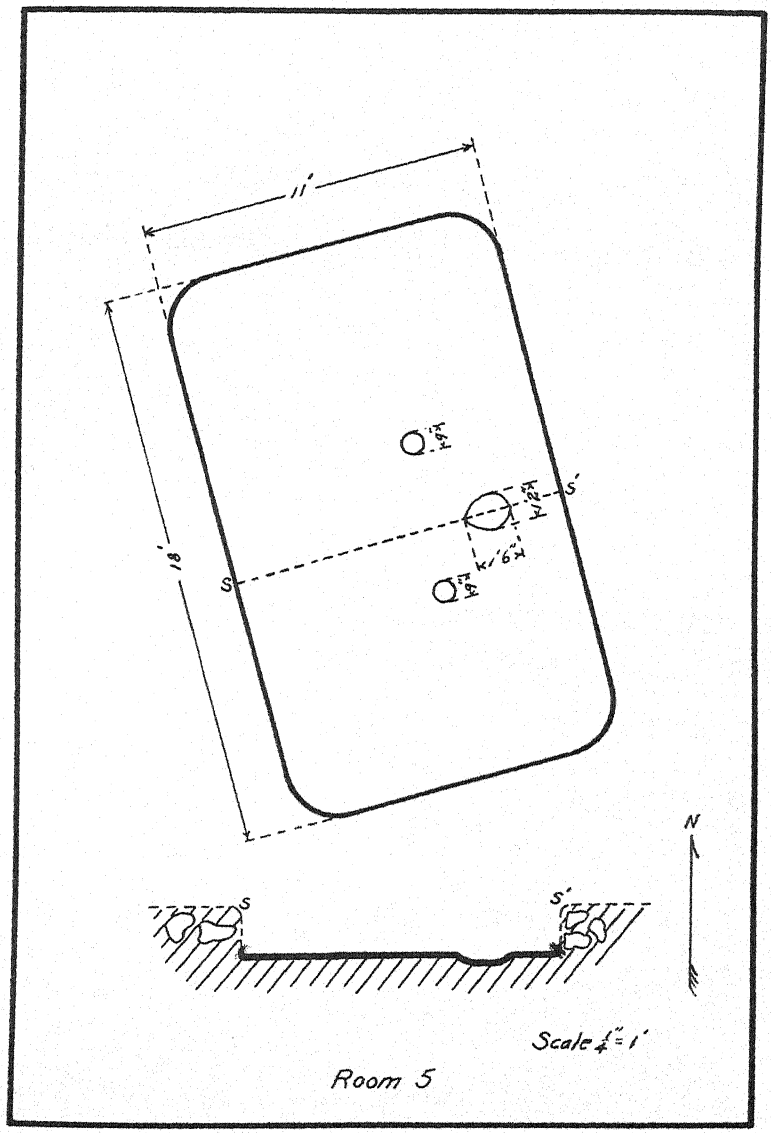

Figure 23.—Outline and cross section of Room 5.

The floor of Room 5 was in good condition over most of its surface. The superstructure had burned, and traces of bear grass and small branches could be found around the edge of the floor and slightly above it on a lip where dirt must have covered them so that they did not burn. A mass of charred material over most of the floor area indicated that the superstructure had burned. Around the edge where the bear grass and twigs projected from the lip they pointed upward at about a 45 degree angle. The floor level was 1 foot 7 inches below the present surface at the north end and 11 inches below the present surface at the south end, the slope in the surface making the difference. Two postholes were found (Fig. 23) with a fire pit between them and to the west of the line connecting them. The fire pit was clay lined and roughly oval, measuring 5 inches deep by 1 foot 6 inches by 1 foot 2 inches. It did not have a raised lip around its edge but was only a depression in the floor.

The extent of the room was determined by a slight lip around the edge of the floor, which was apparent in places. No evidence of walls showed definitely, but rocks lay about the edge and on the surface in an irregular arrangement. They may have been part of a mudded wall. The room measured 11 feet on the north and south walls and 18 feet on the east and west walls.

From the abundance of pottery found in the room it might have been a storage room for large ollas and bowls at the time it was burned. Two almost complete black-on-gray bowls and parts of two plain bowls were found. The broken pieces of at least six ollas were discovered, three of which were interiorly decorated with black-on-gray motifs. One large olla was found pushed into the south posthole.

No other evidence of pit houses was found, but probably others exist.

Outlying Rooms

Southwest of the main part of the pueblo are two large outlying rooms separated from the pueblo by another group of rooms and a section of a defense wall. Room 1, the larger of the two, showed inside measurements as follows: west wall 28 feet, east wall 26 feet, north wall 16 feet, and south

wall 16 feet. Room 2 measured as follows: west wall 22 feet, east wall 23 feet, north wall 13 feet, and south wall 13 feet.

In order to hold up such a large area of roof structure in Room 1, four support posts instead of the usual two were needed. Three of the postholes were found, but the fourth was not definitely located. The northeast posthole measured

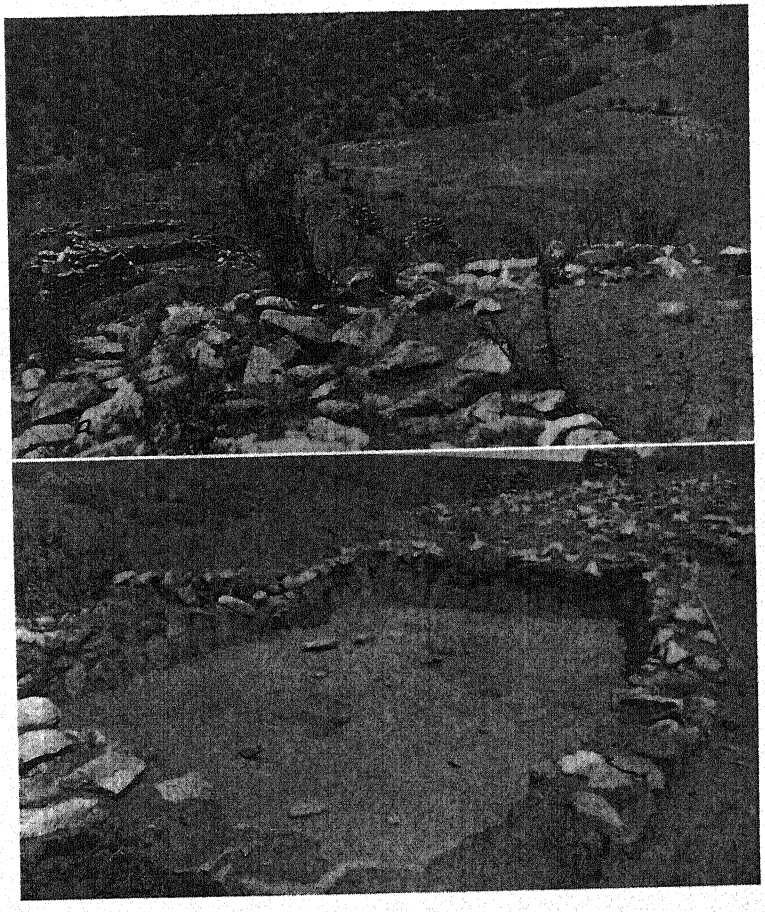

Plate XXXIV.—*a*, View taken from the top of the pueblo looking south, rooms 1 and 2 are on the left and the burial ground is on the right in the distance; *b*, Room 2 showing postholes and stone implements in situ.

10 inches in diameter while the northwest and southeast both measured 8 inches.

Rooms 1 and 2 were built on the slope of the hill so that the upper parts of the rooms had to be excavated from the hillside, while the lower parts were filled. Wall construction consisted of building from the ground on the lower side, filling in this section with dirt removed from the upper part and walling the excavated upper section with large slabs laid edgewise against the native earth (Plate XXXIV, b and Plate XXXV, a, b). Above these slabs the walls continued upward in rough courses.

The walls of Room 1 were straight, but those of Room 2 were bowed slightly. The east wall of Room 2 was bowed outward 1 foot 10 inches from what would be the true north-south wall line. The west wall bowed slightly also. It may be that the slabs fitted against the native earth stayed in place better with such an arrangement (Plate XXXIV, b).

The fire pits in both rooms were depressions hollowed out of the floor. In Room 1 the fire pit was to the east of the line connecting the two east postholes; it was clay lined, and the clay had burned to a reddish color; it was circular, measuring 10 inches in diameter by 5 inches deep and had a raised lip of clay around it. In Room 2 there seemed to be no clay lining or lip. The pit measured 9 inches in diameter one way by 1 foot 11 inches the other and 7 inches deep. It also lay to the east of a line connecting the postholes. Near the fire pit lay a large notched stone measuring 15 inches by 7 inches by 1¼ inches (Plate XXXV, a).

In Room 2 there were charred traces of the superstructure. The roof had burned and small areas of it had fallen in and had been smothered by the clay which came down upon it. About 1 foot of the north support post was found upright and preserved as charcoal. It was 8 inches in diameter and of juniper and therefore not datable. Impressions of poles ranging from ¾ to 1½ inches in diameter were found as well as charcoal fragments lying at various angles. No trace of the ridgepole was discernable. In spots there were traces of charred bear grass and chunks of burned roof clay showing impressions of bear grass. This grass still grows at the ruin,

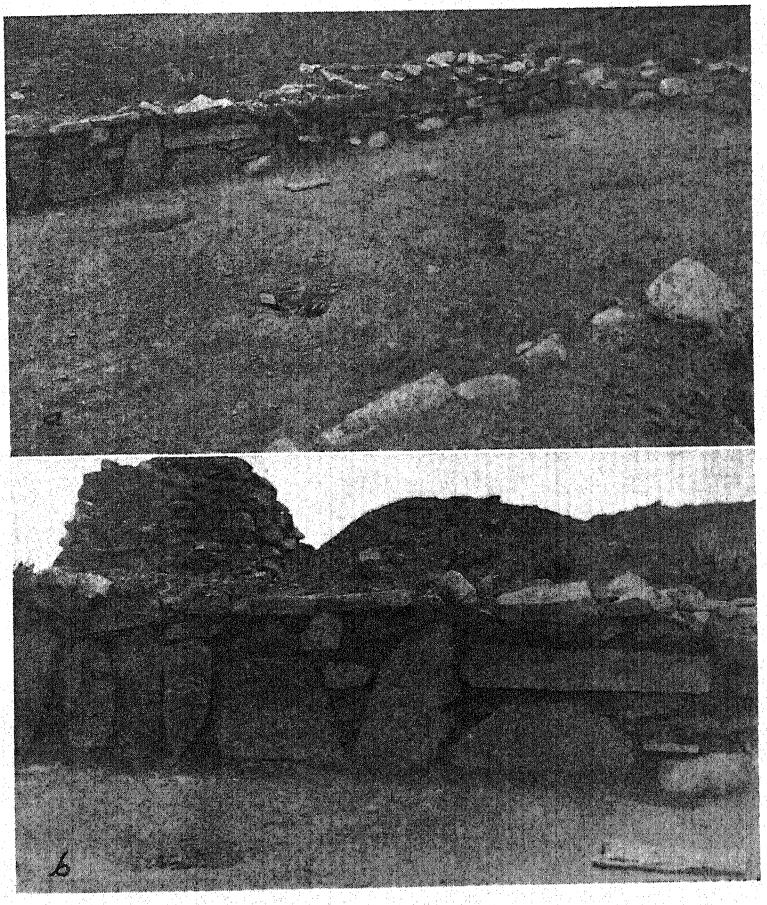

Plate XXXV.—*a*, Southeast corner of Room 1 showing fire pit, four postholes, and notched stone; *b*, detail of wall construction of Room 1.

and at the time of the habitation of the pueblo it must have been one of the favorite roofing materials.

Pueblo Rooms

As far as can be ascertained from the amount of work done on the pueblo, it seems to have been a compact group of about thirty or more rooms atop a rounded hill. The floor levels of but few of the rooms are probably at different heights.

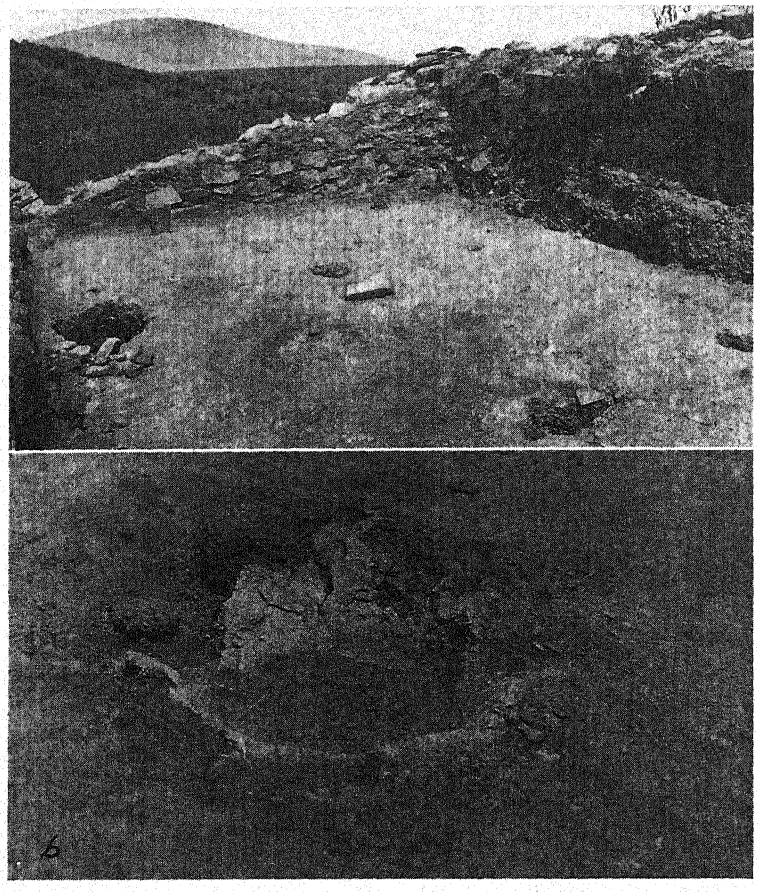

Plate XXXVI.—*a*, Room 3 at south end of main pueblo showing fire pit, two post-holes, and notched stones in place; *b*, detail of Room 3 showing clay-lined fire pit.

The building of the pueblo must have entailed considerable excavation and terracing of rooms to make level floors. All of the rock used in construction was brought from near-by outcrops of granite or from dikes of schist about a half mile up Lynx Creek. The preponderance of building stone was rough blocks of granite.

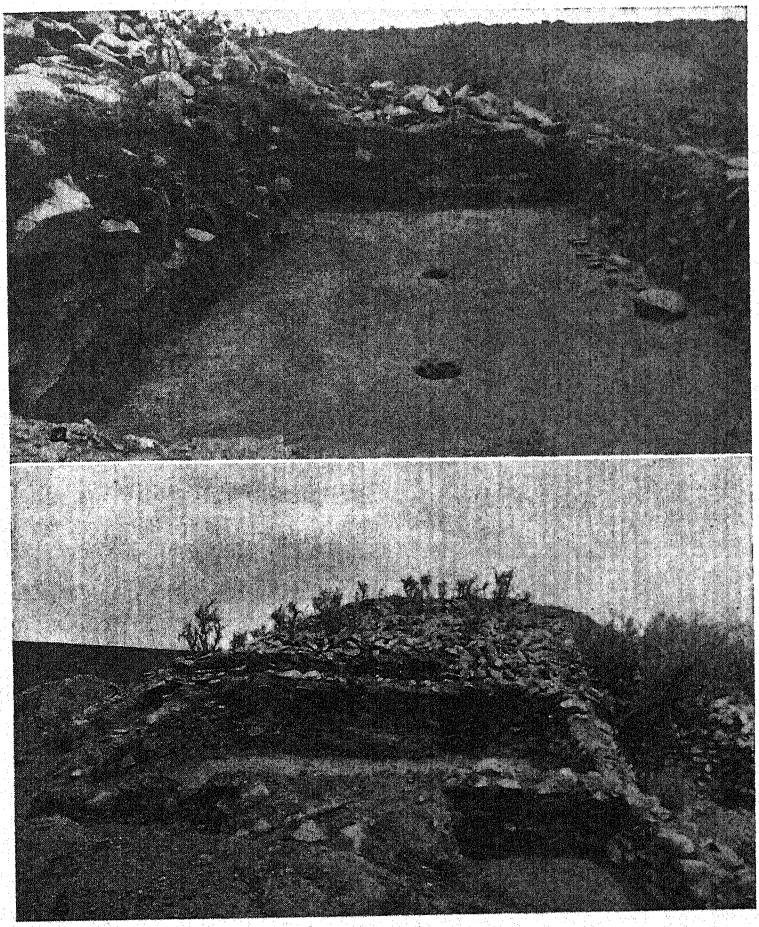

Plate XXXVII.—*a*, Room 4, at the south end of the main pueblo; *b*, looking toward the top of the main pueblo from the south. (Room 3 is in the foreground.)

Room 3, located at the southwest corner of the pueblo, measured as follows: west wall 11 feet, east wall 11 feet, north wall 17 feet, and south wall 19 feet. It had two upright support posts, the east one measuring 10 inches in diameter and the west one 8 inches in diameter at the floor.

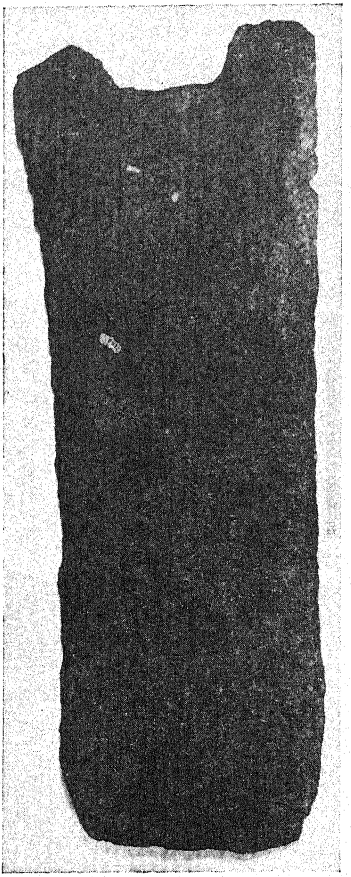

Plate XXXVIII.—Notched stone from Room 1; length 15 inches, width 7 inches, and thickness 1¼ inches.

The fire pit in Room 3 (Plate XXXVI) showed several interesting features. It was 9 feet 6 inches from the east wall and 4 feet from the south wall. It measured 12 inches in diameter and 5 inches in depth and was filled with white wood ashes. It was well plastered inside with clay and had a raised lip or rim in evidence around most of the circumference. Upon removing part of the clay lining it was found that there was a previous and larger fire pit which also had a clay lining and which had been completely plastered over with an inch of clay to form a smaller fire pit.

Two storage pits had been dug in the floor near the south wall. The west pit was oval in shape and measured 17 by 14 inches. The east pit was also oval and measured 20 by 18 inches. Both pits were filled with broken manos, hammer stones, ashes, and debris.

The most interesting feature of Room 3 was three notched stones, two of which were in place in the floor near the west wall (Plate XXXVI, a), while the third was lying on the floor in the southeast corner. The two upright notched stones were buried 9 inches beneath the floor. The north stone measured 1 by 6 by 20 inches and was 1 foot 5 inches from the west wall and 2 feet 6 inches from the north wall, while the south stone measured 17 by 5 by 16 inches and was 1 foot 8 inches from the west wall and 2 feet 11 inches from

the south wall. The two stones, instead of facing each other, faced the east wall of the room. They resembled the notched stones that were found by Haury at the Roosevelt Lake site, but to what use they were put is not known. The third notched stone measured 1 by 8 by 23 inches.

Room 4 (Plate XXXVII, a), the last room to be excavated, measured as follows: west wall 11 feet, east wall 10 feet, north wall 19 feet, and south wall 19 feet. The postholes were arranged similarly to those of Room 3. The floor sloped toward the center of the room where the fire had been made. Ashes and hard, baked ground showed that many fires had burned in this room, but that a fireplace had never been constructed.

The Fitzmaurice Ruin showed three types of room construction. First was the pit-house type, of which only one was excavated. Second were the outlying rooms, which were partially slab lined. Two of these were excavated. One was extremely large and had contained four posts to support the superstructure. The other was fairly large and irregular in shape but with only two postholes. Third were the pueblo rooms, in which the feature of greatest interest was the two notched stones in place in the floor.

POTTERY

The pottery secured from burials and rooms, though crude when compared with ceramics from other late pueblo sites in the Southwest, shows, besides plain and decorated pottery similar to that at King's Ruin, additional types which are much better made and decorated. Although no tree-ring dates were secured for Fitzmaurice Ruin, the pueblo must have been occupied contemporaneously with King's Ruin and therefore housed a people who lived between A.D. 1050 and A.D. 1300. During this period highly developed ceramics were being manufactured elsewhere in the Southwest, but here the standards of the potters fell far below those of their contemporaries. Intrusive sherds corroborate the fact that they were familiar with the best types of pottery from the

Little Colorado drainage and elsewhere. The improvement in pottery making over that at King's Ruin seems to be due to influences from the southeast where better types of pottery were made.

In many sections of the Southwest a differentiation is found between the paste used in decorative pottery and that used in the culinary wares, but here the paste shows that no such differentiation was made; consequently the paste used in the decorated was just as crude as that used in the culinary ware.

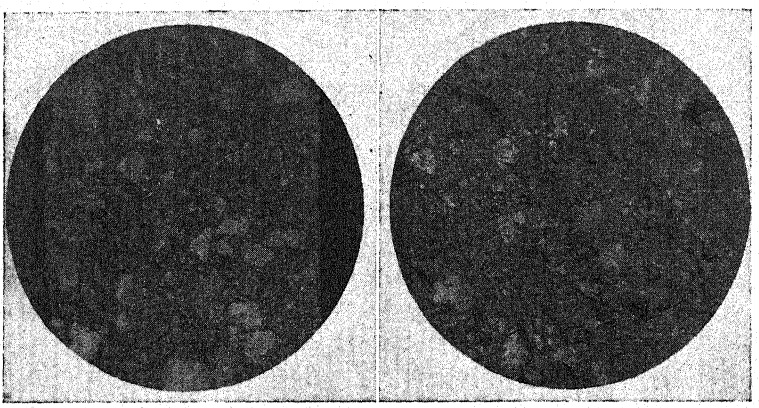

Plate XXXIX.—Prescott Gray Ware paste showing quartz, feldspar, and mica. Magnified ten times.

The wares found at Fitzmaurice Ruin fall into two classes, one tempered with quartz, feldspar, and mica; the other tempered with mica schist. The first type is identical with that found at King's Ruin and is here designated as Prescott Gray Ware. Prescott Black-on-gray and Prescott Black-on-brown and derived decorated types may be considered as subtypes.

Prescott Gray Ware is composed of a coarse gray paste often burning to reddish brown. The temper is crumbly and irregular and consists of quartz, feldspar, and mica (Plate XXXIX). The mica particles always show on both the interior and exterior surfaces, no slip having been applied.

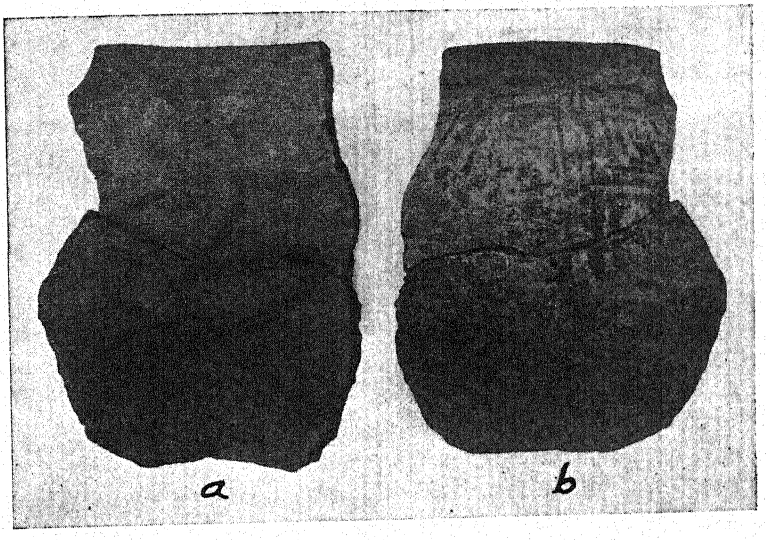

Plate XL.—Decorated olla sherds; *a*, interior, *b*, exterior design.

The paste always contains more than 50 per cent tempering material. The surfaces of the vessels are rough and uneven. It is impossible to tell whether they were made by the coil or the paddle-and-anvil method. Variations of the gray ware occur in a brownish ware which is basically the same as the gray. Bowl and olla shapes are found. Designs in black of angular scrolls, keys, crosses, and zigzag lines, all very poorly done, appear on the interior of bowls. Ollas are often decorated both on the interior and exterior surfaces with broad, heavy, black lines (Plate XL).

A thin-walled red ware is found which has a paste very similar to the Prescott Gray Ware paste, the only difference being that the tempering material is ground much more finely. It usually fires a dark gray or black. This ware is probably a local development. More study will bring out any affiliations it may have with wares from other regions.

A brown ware, which is the second type of pottery found here, is tempered with mica schist (Plate XLI). It is not so common as the Prescott Gray Ware. It may be a local development because a great deal of mica schist occurs locally

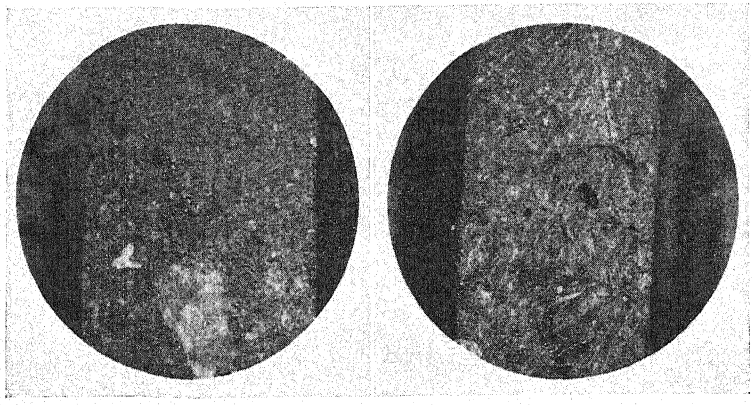

Plate XLI.—Sections of sherds showing mica schist tempering material. Magnified ten times.

and was probably used by the potters in place of crushed granite. A more intensive study will aid in discovering its range.

The decorations on pottery vessels were placed on the interior of bowls and on the interior and exterior of ollas. The extreme crudity in the art of decoration is apparent. First, the surface to be used for the design was unevenly

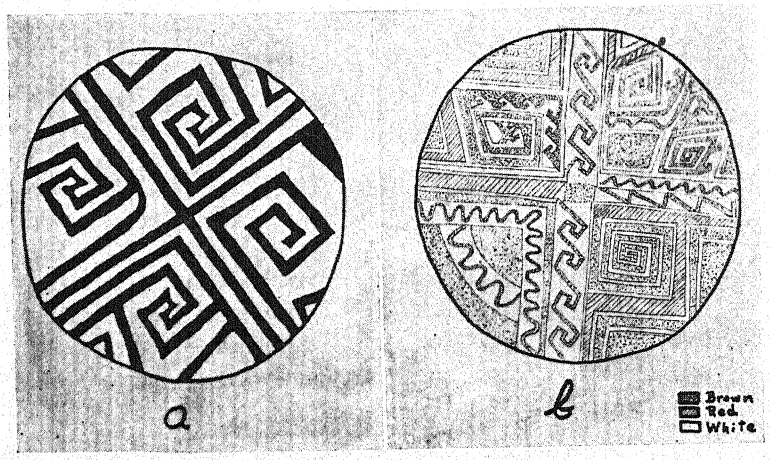

Plate XLII.—Polychrome bowl designs; *a*, interior, *b*, exterior.

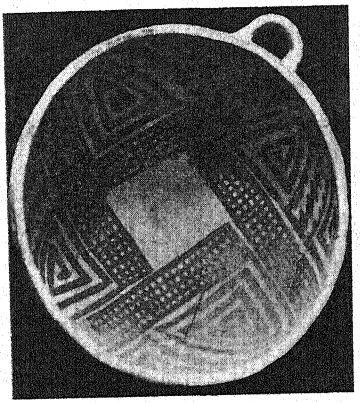

Plate XLIII.—Black-on-white bowl.

finished and many times left rough; second, the paints used were of such quality that they were not always permanent; and third, the brushwork and application of design were very poorly done. But even though it is crude and not well done, it is similar to and somewhat better than that at King's Ruin.

The decoration on Fitzmaurice bowls consists of continuous bands and zones of designs around the upper parts of the bowls with sometimes a single element in the bottom. A few quadrate designs occur. The following descriptions are based on eight decorated bowls and a number of decorated sherds found during the summer's field work.

The polychrome bowl (Plate XLII) was decorated with red-on-gray on the interior and with red- and white-on-

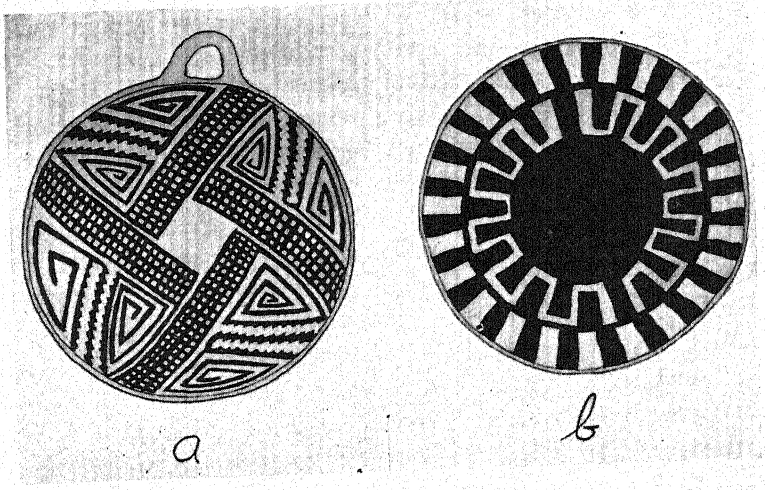

Plate XLIV.—*a*, Black-on-white bowl design, *b*, broad red lines on a brown background (white represents red lines).

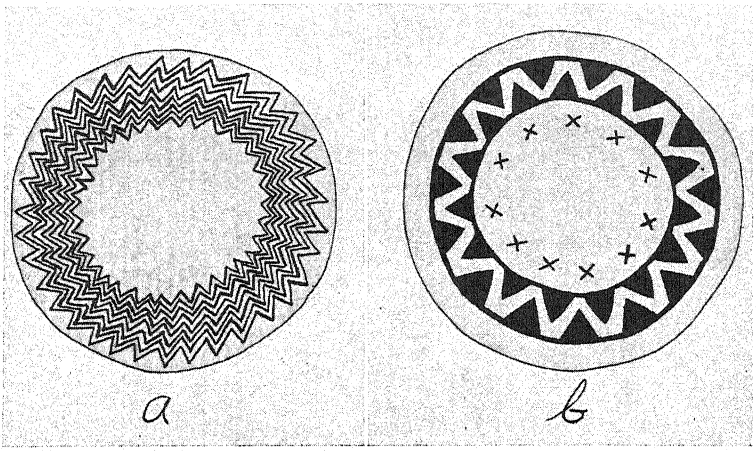

Plate XLV.—Zigzag designs on bowls.

brown on the exterior. On the interior the design is divided into four sections by two lines crossing each other in the center of the bowl. Each section then contains a form of angular scroll. On the exterior there are also four parts making up the design, but each division was decorated differently. Another bowl with similar interior decoration was found, the design on which is in broad red lines on a brown background. The exterior was covered with a reddish slip (Plate XLIV, b). Both bowls were mortuary offerings.

One black-on-white interiorly decorated bowl with a horizontal handle was found in a burial with five other pottery vessels. It is divided into four sections (Plate XLIII) with an undecorated square in the bottom of the bowl. Four broad hatched panels form one side of each section, and the remainder of each quarter is made up of two of the typical angular scrolls of the Prescott and Flagstaff regions. A small scroll in one section of the design was never completed (Plate XLIV, a).

Zigzag lines in zones around the upper portion of bowls are rather common as a means of decoration. A typical deep Prescott Gray Ware bowl has eight such zigzag lines around its upper portion as decoration (Plate XLV, a). A flaring-

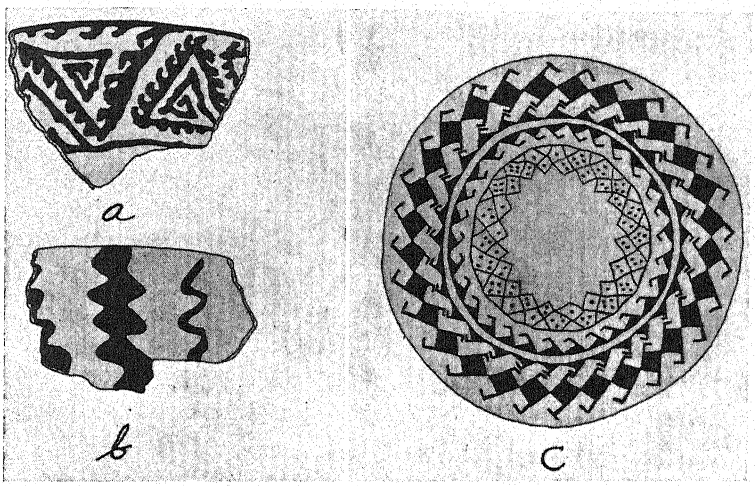

Plate XLVI.—Black-on-gray designs.

rimmed, reddish-brown bowl has a similar design with only four zigzag lines. It was made with rather thin walls, as compared with the Prescott Gray Ware and is of a better paste. A third bowl of Prescott Gray Ware has a negative zigzag line (Plate XLV, b) in a band of black. Eleven crosses were placed below this band to complete the decoration.

Bands of triangular keys (Plate XLVI, a) and frets (Plate XLVI, c) also were used. Vertical zigzag lines, which are the usual element of design found on the interior of ollas, were used as decoration on the interior of one small bowl (Plate XLVI, b).

The pottery vessels do not present a great many shapes but are more varied than at King's Ruin. The typical Prescott Gray Ware shape, a vessel being more than a half sphere and having an incurving rim, was found here (Fig. 24, b), and a variation of it with a horizontal handle similar to bowls found in the Flagstaff and Kayenta regions (Fig. 24, a) was also discovered. Besides these the flaring-rimmed, shallow bowl was found (Fig. 24, c) and represents the shallower type of bowls found in the adjoining regions of the Agua

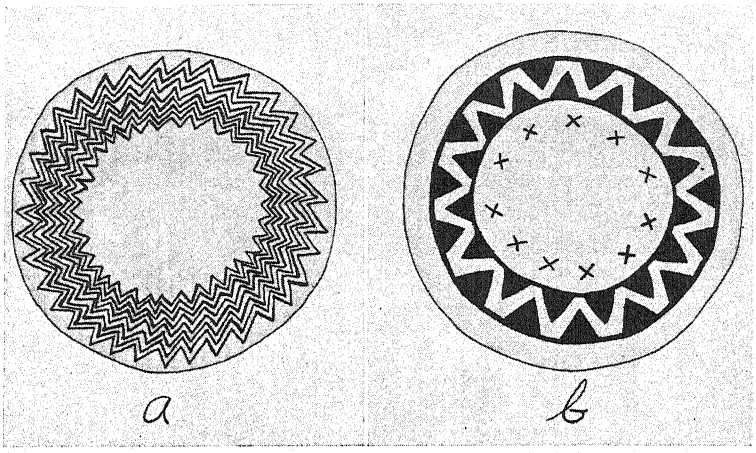

Plate XLV.—Zigzag designs on bowls.

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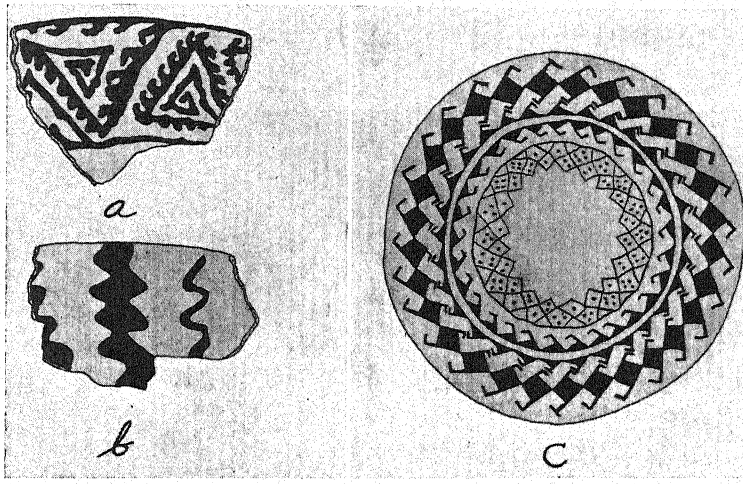

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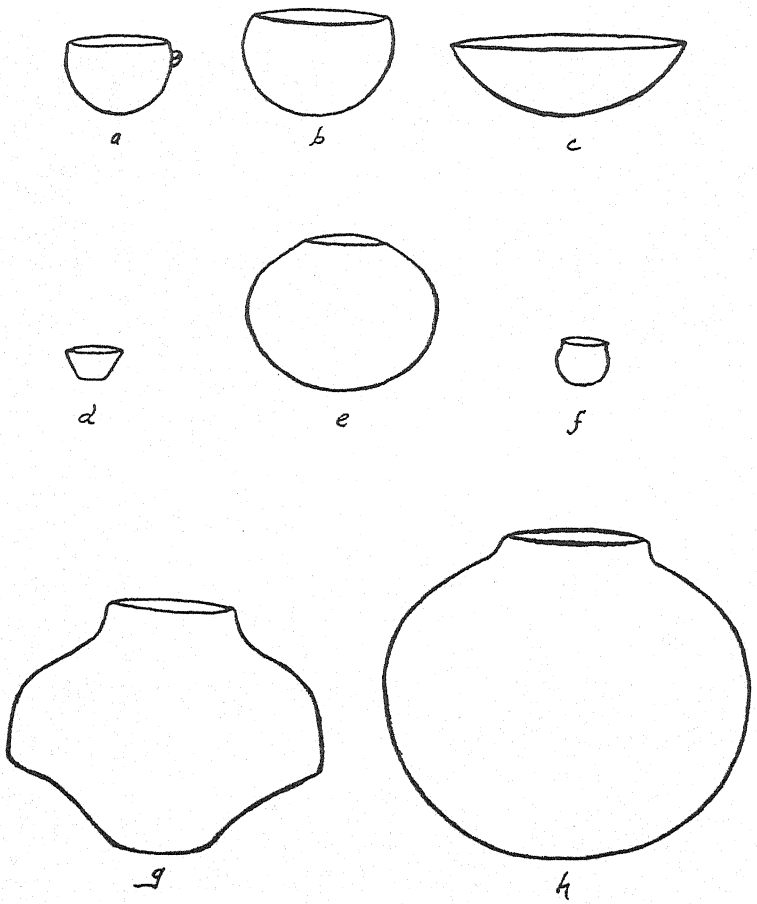

Figure 24.—Shapes of vessels from Fitzmaurice Ruin.

Fria and Verde rivers. Several small vessels of various shapes were also unearthed (Fig. 24, d and f).

Ollas are of two types where shape is considered. One is a thin-walled, well-shaped olla with the "Gila shoulder" (Fig. 24, g and Plate XLVIII). The bottom is rounded but flares and then abruptly changes direction and forms a shoulder. The small bottom fits very well into depressions in the floor. The other olla shape is spherical with a small

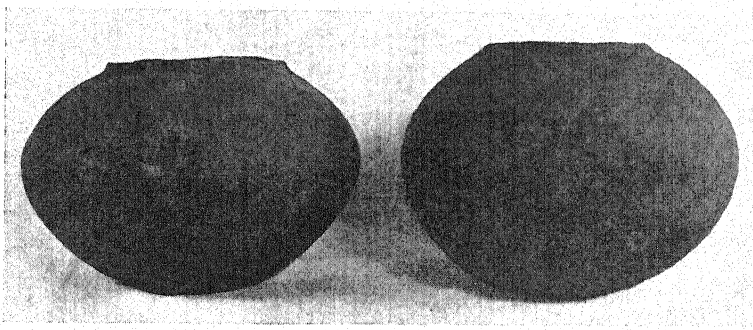

Plate XLVII.—Vessels suggesting seed-jar shapes.

neck (Fig. 24, h). This type is often decorated both inside and outside with crude, broad, black lines (Plate XL).

Other vessels suggest the seed-jar shape of the San Juan area (Fig. 24, e and Plate XLVII). The vessels found are approximately 9 inches in diameter.

Rim shapes vary considerably. The typical Prescott Gray Ware bowls are almost uniform in rim shape (Fig. 25, a), while bowls of the red ware show considerable variation (Fig. 25, b). The black-on-gray and plain brown bowls have thicker walls and a rougher finish than do the red ware bowls.

Only portions of ladles and scoops were found (Plate XLIX). One has a short handle measuring 2 inches in length but has only a small portion of the bowl remaining. It is undecorated and the paste is that of the typical Prescott

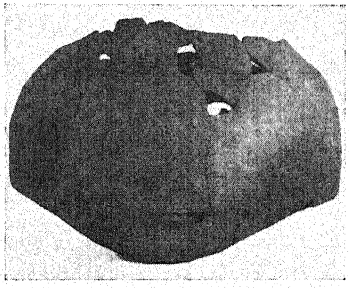

Plate XLVIII.—Olla showing the Gila shoulder.

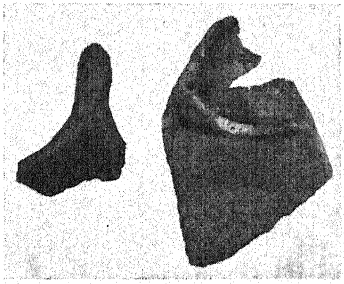

Plate XLIX.—Fragments of ladles or scoops.

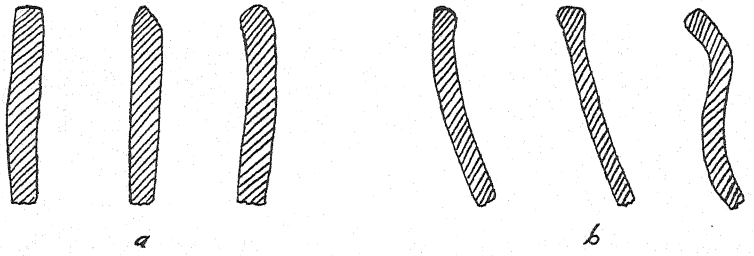

Figure 25.—Shapes of bowl rims, Fitzmaurice Ruin.

Gray Ware. Another segment of a vessel is undoubtedly a scoop with a partition near the small end in which the thumb was inserted while the scoop was being used.

Summary

Decorated vessels at the Fitzmaurice Ruin consist mainly of Prescott Black-on-gray and Black-on-brown bowls and ollas. In addition there are the rare types of polychrome and red-on-brown, and finally presumably intrusive types of black-on-white, Tusayan Polychrome, and white-on-red characteristic of the upper Verde. A few sherds of red-on-buff of probable local manufacture were also found.

ADDITIONAL POTTERY OBJECTS

Pottery vessels do not constitute all of the clay objects obtained during the excavation. There were several artifacts worked from pieces of broken vessels. One of these was part of a parching dish made from the bottom of a large olla that had a Gila shoulder. The edges of the dish were ground smooth. It measured 23 inches in diameter. Of frequent occurrence were discs made from potsherds with holes drilled through the centers.

A few human and animal clay figurines of a type common in the Prescott region were found. The human clay figurines are crudely made of a coarse paste tempered with mica and quartz similar to that used in the manufacture of Prescott Gray Ware. The heads are flat on the back and a portion of clay pinched between the thumb and the finger constitutes

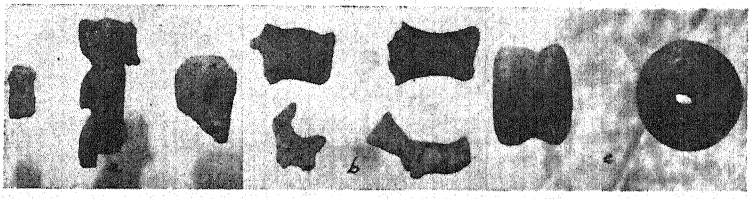

Plate L.—Clay objects.

the nose. Eyes and mouths are slits incised with a stick or fingernail. The usual form is without arms or legs and probably was used in the manner of a prayer-stick offering (Plate L, a). However, one was found with arms and legs and measured 3⅛ inches in length. The small, clay animal figurines are crudely made, and all those found were broken (Plate L, b) so that it is not possible to determine just what kinds of animals they represent. Two nearly spherical clay objects were found which were perforated and resembled large beads (Plate L, c). They measure 1 inch in diameter.

OBJECTS OF STONE

Metates, manos, grinders, axheads, spear- and arrowheads, and a few ornaments were made of stone of various kinds. Chipping, flaking, pecking, and grinding were the techniques employed in the manufacture of stone objects.

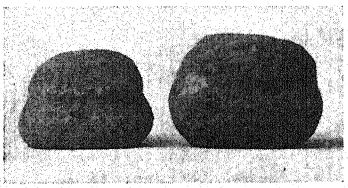

Plate LI.—Grinders of granite.

Metates are of two types (the trough and the basin) and are made of two different materials. The trough type is of two classes—those with a steep descent away from the end used by the person grinding and those with shallow, level troughs. Side walls are from ½ to 4 inches high. The basin type has an oval basin in a block of stone measuring from 6 by 4 inches to 8 by 5 inches and is from 1 to 3 inches deep. All the trough type of metates are of lava and granite rock, while the basin type is of granite.

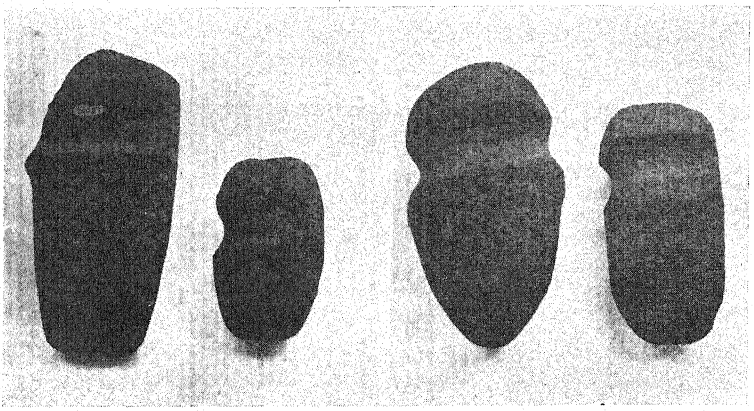

Plate LII.—Axheads and a stone pick.

Manos were also made of either granite or lava rock. Some manos are two surfaced, but the majority are of the single-surface type. A few grinders (Plate LI) of granite were found.

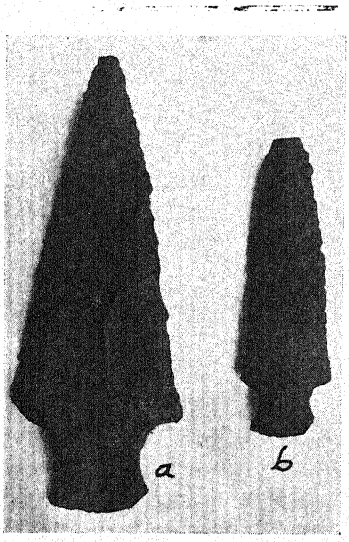

Plate LIII.—Spearheads; specimen *a* measures 4⅛ inches in length.

The axheads are all of three-quarter-groove type (Plate LII). In Plate LII are shown two polished axheads of diorite, both well shaped. In Plate LII, b, are shown a pick and an axhead both of which are only pecked into shape and are not polished. The pick is of the full-groove type.

The spearheads (Plate LIII) are both of basalt. Most of the arrowheads and drills (Plate LIV) are of obsidian; a few were made of flint.

Additional stone objects, such as flat pieces of schist used for digging tools and stone pot covers, were found. The

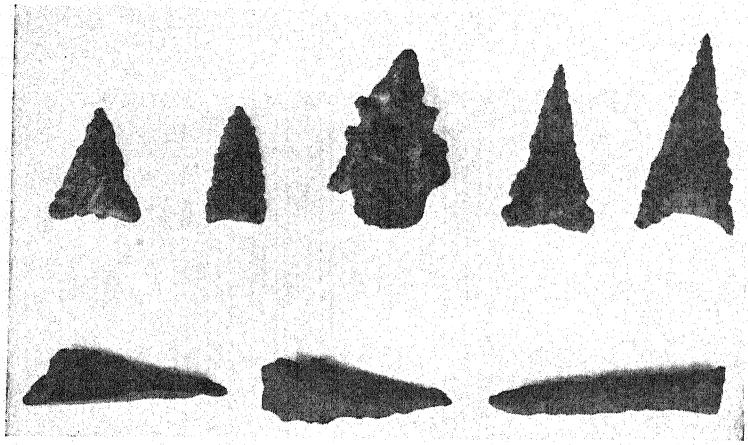

Plate LIV.—Arrowheads.

three stone discs (Plate LV) were probably made for spindle whorls. The largest one measures 2 inches in diameter but is unfinished.

Quantities of hematite, azurite, and malachite were found on the floors of rooms. They were sometimes found finely ground and must have been used for body paint.

A few turquoise pendants were found in rooms and burials. A number of pieces of unworked turquoise also were discovered.

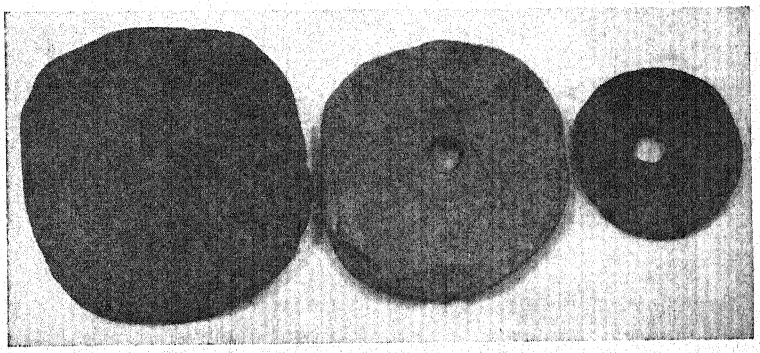

Plate LV.—Stone discs.

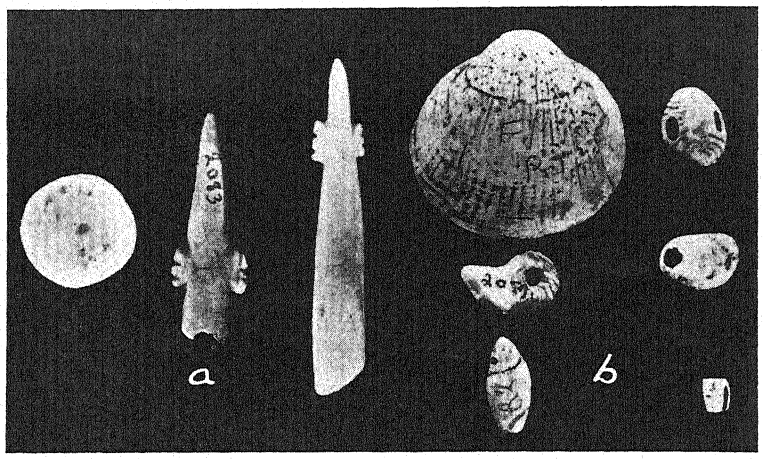

Plate LVI.—Shell objects.

OBJECTS OF SHELL

A small amount of shellwork was found during excavation. Two large Cardium shells measuring 3¾inches in diameter were found in a burial. Other shell objects are shown in Plate LVI. Several parts of what may have been pendants in the shape of lizards (Plate LVI, a) were found. A few shells of various kinds (Plate LVI, b) had been made into beads and pendants.

OBJECTS OF BONE

Awls were the only bone objects found at Fitzmaurice Ruin. They are fashioned from bones of various animals. Some show slight modification from their original form (Plate LVII, a and d), while others (Plate LVII b and c) show considerable change. All were probably made from deer or antelope bones.

SUMMARY

The small amount of excavation carried out at the Fitzmaurice Ruin in the summer of 1933 indicates the presence at

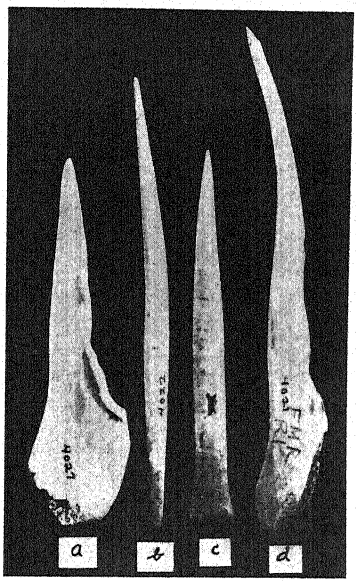

Plate LVII.—Objects of bone; specimen *d* measures 7½ inches in length.

that site of a culture similar to that represented by the later period at King's Ruin. There are, however, strong influences apparent from the immediate southeast. The pottery shows affiliations with pottery from the lower Agua Fria drainage, and the substantial masonry of the pueblo suggests the latter region rather than the Chino Valley or the region north and west of Prescott.

Elements of the culture represented at Fitzmaurice Ruin which seem to deserve special emphasis are: (1) the use of stone slabs at the bases of walls, (2) the notched stones set in the floors of rooms, (3) basin- or mortar-type metates, (4) the great variety in vessel shapes in the plain red ware, notably bulged-bottom ollas with Gila shoulders and the shapes similar to seed jars, (5) the grafting of crude Prescott Black-on-gray design work on a good grade of red ware, and (6) the common use of human and animal figurines of clay.